

COMBAT FORCES

Infantry Journal

Field Artillery Journal



Who's Pushing?

These are not questions for me to answer. I happen to be sitting in this chair. You have directed to me many questions today that, if I were not here, you would not have . . . thought of asking them of me.—GENERAL J. LAWTON COLLINS

IN the course of the ammunition shortage investigation by the Senate Armed Services Committee, Senator Knowland of California put a long and involved question to General J. Lawton Collins that in effect asked him if he didn't think Congress should be informed when civilian heads of the defense agencies overrule military chiefs and ask for smaller appropriations than the uniformed men think is necessary.

In his reply General Collins carefully pointed out that as Chief of Staff of the Army he was responsible to the Secretary of the Army and as a member of the Joint Chiefs he was responsible to the Secretary of Defense and the President.

"That is what the laws says," General Collins continued, "and if you are going to have some order and teamwork in Government, we must play our part under the assumption to which I thoroughly subscribe, that the military leaders must be subject to and operate under civilian heads of the Government as prescribed by law. There are other factors besides military considerations that determine whether you should appropriate this, that or other things, or whether the Bureau of the Budget will permit us, to ask you to appropriate."

General Collins made this point even clearer in answering other questions. The following from the record shows that he was reluctant to answer questions that more properly should have been addressed to his superiors.

Senator SYMINGTON. I think what Senator Byrd would like to know is whether or not the Department of Defense approved the request made by the Bureau of the Budget of the Congress, it was what you and what the Army felt was adequate from the standpoint of your ammunition.

General COLLINS. You are putting me in a difficult position, Senator, to answer that, because of the fact that as Chief of Staff of the Army I do not submit the budgets.

I have a certain part to play in their production and in their presentation, but the matter of what is approved and what is not approved within the Department of

Defense in my opinion should be asked of an official of the Department of Defense, and not a military man, under our system of government.

Senator SYMINGTON. I think you know me well enough to know I was not trying to put you in a difficult position.

General COLLINS. Yes, sir. The only point I make is that if the committee desires to get into these aspects of the problem, they are not questions that I should be called upon to answer. If the chairman directs me to answer, I will answer them.

General COLLINS. Senator, . . . The only point I am making is that the Department of the Army must comply with the laws of the Congress. It must comply with the directives that it receives.

Unless you want to change the system, you cannot hold a military man responsible for changing your directives or the directives that come down to him from superior authority.

General COLLINS. . . . What you are doing, Senator, now is asking me just the same as the Supreme Court has frequently refused to answer: what would have happened had such and such been the case. I don't know, and I am not a lawyer, but I will say this: that if you want that answered, I am not the man to answer it.

Senator BYRD. At least you make recommendations, don't you, General, on the part of the Army?

General COLLINS. Yes, sir; but I make my recommendations by law to the Secretary of the Army. That is the man I make my recommendation to, as stipulated in the law passed by Congress. I make them to the Secretary of the Army.

General COLLINS. But the recommendation you see that is sent in to the Secretary, Mr. Byrd, is not the recommendation of the Chief of the Staff of the Army necessarily. Under our system of government I believe in the subordination of the military to the civilian authorities in the Department.

The man that is responsible so far as the Department of the Army is concerned for the final recommendations that go in, is the Secretary of the Army. He receives recommendations from me and from his Assistant Secretaries. We made those recommendations, but the decision as to what was asked for is not the decision of the Chief of Staff

of the Army or any man in uniform in the Army.

General COLLINS. . . . I made my recommendation on the recommendation of the staff and the analysis and the recommendation of the theater commanders, and it was more than what was finally asked of the Congress. You forced me to say that. I say that reluctantly. I did not volunteer it.

THERE were other questions of the same nature and each time General Collins was careful to emphasize his subordinate position. Indeed at one place Secretary of the Army Stevens intervened to observe that the record clearly showed that General Collins had recommended larger amounts of ammunition than had been approved. "I would like to take this opportunity," said the new Army Secretary, "of paying my own tribute to General Collins for having had the foresight to estimate the situation the way he did."

And in another place Senator Symington (formerly Secretary of the Air Force) observed that he knew from experience "that nobody tried harder to prevent the Army from being cut to pieces" than General Collins. He recalled that just six weeks before Korea General Collins had "told high authority this was the last time he would ever approve a further reduction in power of the Army as long as he was Chief of Staff." But the important points are not that General Collins deserved praise either for his foresight or his loyalty to the Army. The important points are that while General Collins was scrupulously observing the legal and traditional role of the soldier in our form of government, some Senators were asking him questions that, if he answered directly and to the point, would constitute a violation of the proprieties.

We read more than occasionally that the "brass" is taking over the Pentagon if not the country itself. Yet, we would ask, who observes the forms and the spirit of our laws and customs more diligently than the men in uniform?

*One if by land...
two if by sea*

But what if by air?

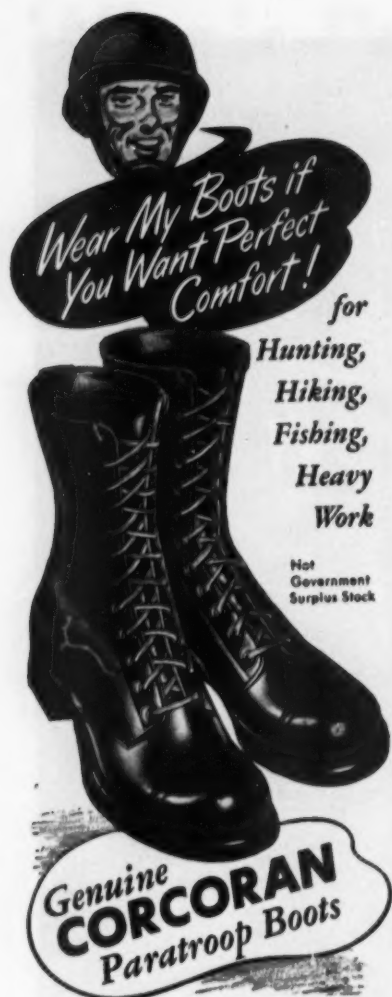
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★ To the Editors . . . ★

Grateful Author

To the Editors:

In the treatment and layout of my article, "Stress the Fundamentals," THE COMBAT FORCES JOURNAL did an outstanding job. Your striking use of color, and the attractive arrangement of maps and photographs gave the article unusual eye appeal, and I feel that you are responsible to a large degree for the rapid and wide dissemination of my ideas on this vital subject.

Now that I have had the opportunity to study and evaluate the reaction to this article, I wish to commend you and your staff for your excellent presentation of the material. I also wish to congratulate you on the size and range of your audience, for the many comments I have received are a good indication that COMBAT FORCES JOURNAL is read with great interest and attention by all ranks of the Army and by many others as well.

Please accept my sincere thanks for your fine cooperation, and may I also take this opportunity to wish you and your staff the best of success in the future.

J. LAWTON COLLINS

Office of the Chief of Staff
U. S. Army
Washington 25, D. C.

• The Editors are grateful to the Chief of Staff for his kind and thoughtful letter. As a long-ago contributor to the *Infantry Journal* and as a former President of the Infantry Association, General Collins knows that these columns are open to him whenever he has something to say to the troops. We do want to say here that there have been more requests for permission to reprint "Stress the Fundamentals" than any other article in the memory of the staff. In every case permission has been granted and we can only say we regret it

was impossible to reprint thousands of copies of the article for free distribution.

Yeab?

To the Editors:

I don't want to intrude, but since some of our top brass have been given rather important civilian jobs lately, nothing is said any more about the "Military Mind."

MAJ. W. E. ROSEBUSH

411 E. Washington St.
Appleton, Wisconsin

• Don't kid yourself . . . or us.

Intelligence Failures

To the Editors:

Kudos to Hanson Baldwin for "Battlefield Intelligence" (CFJ February 1953). It is this type of military historical research, done with the objectivity of one who has no axe to grind, that gives encouragement to the hope that eventually we may derive maximum profit from a study of the past.

We have heard charges, countercharges and explanations, hurled relative to an alleged similar intelligence failure in Korea relating to the Chinese intervention. Perhaps Mr. Baldwin, having shed some light on the intelligence failures of the Battle of the Bulge, will someday favor us with a study of this new intelligence failure, if failure it was. It is hoped that we won't have to wait another nine years after the action to learn what, if any, our intelligence mistakes were in Korea or whether or not in 1950 we made the same mistakes as in 1944.

Give us more articles of this caliber and more articles by Mr. Baldwin.

LT. COL. F. B. NIHART
USMC

1st Bn, 4th Marines
3d Marine Division FMF
Camp Pendleton, Cal.

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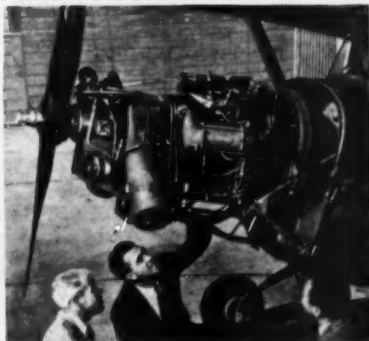
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Back Issues of IJ

To the Editors:

I would appreciate hearing from any reader who can tell me where I might be able to obtain any copies of *The Infantry Journal*, years 1930 thru 1940. Information on even one copy will be appreciated.

W. F. COFFEY

Box 2424

Hickory, N. C.

Another Bobble

To the Editors:

The artillery has always known that the infantry doesn't know which end the hoot comes from in motor transportation but when infantry officers don't know the difference between a jeep and a ¾-ton it reaches some sort of high. See page 30, March issue. Please pardon me for saying that they don't know their jeep from a hole in the ground.

Don't take the blame for this one, editors. You are excused for that 155 how cover. But someone should take the rap for this last bobble.

LT. COL. A. L. FITZSIMMONS

Artillery

AP0 957, c/o PM

San Francisco, Cal.

• Misery loves company; catastrophe comes in pairs . . . explain it as you will, but this latest bobble was made by the same editor who made the one on the 155 howitzer cover of the February issue. We can't blame the two infantry officers of the article for they never saw the picture (so far as we know) until the magazine came out.

Stilwellian Prose

To the Editors:

I thought the March cover unusual from a production viewpoint, and highly pleasing to the eye. Very effective job.

As always, I find "To the Editors . . ." a most deadly pitfall to one's plans to get to bed early. Before sacking in last night I had to digest each communiqué closely.

Liked very much the retort of "Major Infantry, RA" to the equally well-put plaint of "SFC Armored Infantry." Just one (small) point on this letter, though . . .

The Major quotes the colorful dog-Latin "motto" that General Joseph W. Stilwell liked so well, as *Illegitimi nil carborundum*. Vinegar Joe's wording, I believe, went as follows: *Illegitimati non Carborundum*.

Translated, this is supposed to mean something like, "Don't let the Bastards grind you down."

BRUCE JACOBS

270 Park Avenue
New York 17, N. Y.

Expedients and Ordnance

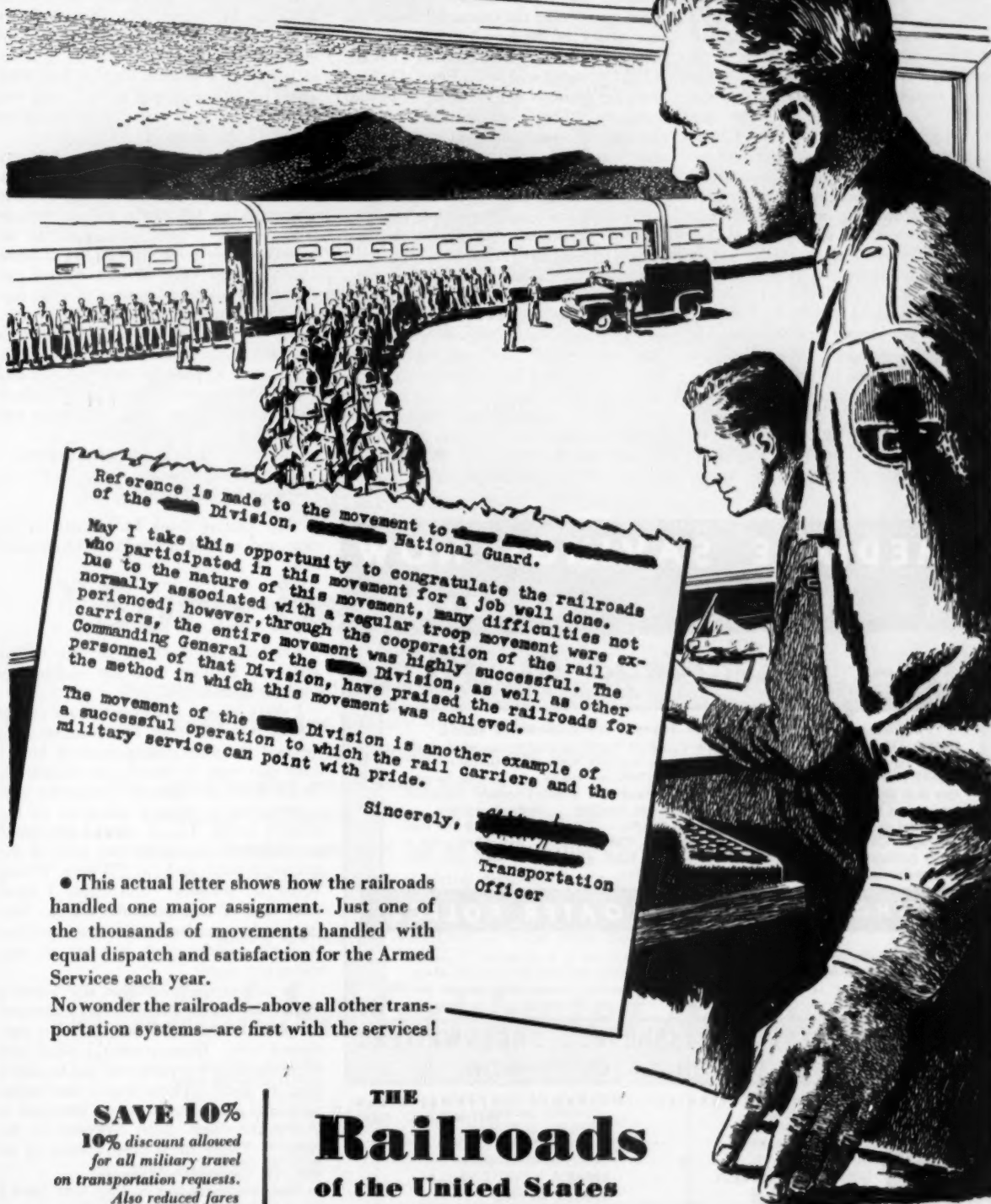
To the Editors:

It may be heresy for you to read this letter, for I am neither artillery nor infantry, but ordnance. Nevertheless I have enjoyed reading your magazine for nearly a

COMBAT FORCES JOURNAL

ONLY THE RAILROADS

can handle the job!



Reference is made to the movement to [redacted] of the [redacted] Division, [redacted] National Guard.

May I take this opportunity to congratulate the railroads who participated in this movement for a job well done. Due to the nature of this movement, many difficulties not normally associated with a regular troop movement were experienced; however, through the cooperation of the rail carriers, the entire movement was highly successful. The Commanding General of the [redacted] Division, as well as other personnel of that Division, have praised the railroads for the method in which this movement was achieved.

The movement of the [redacted] Division is another example of a successful operation to which the rail carriers and the military service can point with pride.

Sincerely, [redacted]
[redacted]
Transportation
Officer

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year now. I have contented myself with digging into each issue and approving or disapproving the theses set forth by your authors. Your March issue, however, struck so near home that I am forced to reply to an article contained in it.

That issue concentrated on an evaluation of motor vehicles and the combat soldier. The procurement, supply and maintenance of vehicles and their parts come under the mission assigned to the Ordnance Corps. Thus, I found myself reading with particular zeal these articles written by members of the combat arms. Much to my disappointment, I found reference to the Ordnance Corps and the aid they can give the using units, in addition to their scheduled maintenance and supply obligations, no more than a half dozen times. Considering that there were over forty printed pages dwelling on motor vehicles, their maintenance and supply, I feel that the role of Ordnance as a valuable aid to using units should be emphasized a great deal more.

Ordnance should not be overlooked when there are supply and maintenance problems to be solved by the using arms—especially in the area of field expedients. We are much more than a schedule, a technical manual or a critical group of mechanics and record keepers.

SR 750-105-10, dated 18 February 1952, established and set up the procedures

for Ordnance instructor-inspector teams. These teams are designed to iron out supply difficulties, expedite emergency repairs, transmit data on field expedients, and generally lessen the supply and maintenance enigmas that may plague your units in the field.

"So what!" you say, "you've heard of them before. . . . Combat makes greater demands and eliminates the flexibility of these items." On the contrary. Under the new tables of organization for the ordnance battalion, infantry division (T/O&E 9-25) Ordnance will be up front! Division ordnance platoons will be attached to your regiments. They will physically contact elements of your command and be constantly available to help you resolve problems of supply and maintenance. They are ready and eager to give you assistance in hurdling problems that cripple your mobility or firepower, especially in the line of field expedients. Why not consider the role of Ordnance in this light more carefully?

Captain Lawrence W. Fite in his article on field expedients enumerated several excellent methods to "keep 'em rolling." But he ignores the help of Ordnance teams in solving these maintenance and supply problems. By emphasizing, "The more you do for yourself, the less the supporting services have to do for you," Captain Fite has set forth an admirable thesis. I only

ask that you temper this principle with considerations of the effect it may have if it becomes distorted and overemphasized. Failure to check with Ordnance for information on expedients may lead to a much bigger problem in the long run. A vehicle abused by "improper" expedients may suffer complete rebuild instead of third echelon maintenance.

In other words, gentlemen, don't try to do "it" all by yourself. You are not always in a position to see the effect an expedient may have on the serviceable life of a vehicle . . . or a weapon for that fact. Ordnance is better equipped in skill, tools and experience, to give you a "best" expedient in almost any situation.

The intent of this letter is to dispel any gray-haired concepts that Ordnance is nothing more than a schedule for maintenance or a used car lot where a worn vehicle is traded for a serviceable one. If we haven't already contacted you, let us know what's wrong. Only in that manner can we become completely aware of your supply and maintenance problems. A telephone call may bring an augmenting force designed to correct difficulties and provide repairs and supplies for your vehicles and instruction for your motor men. Think of Ordnance when you think of vehicles and expedients.

LT. DAVID H. GILBERT

The Ordnance School
Aberdeen Proving Ground, Md.

● The Editors thank Lt. Gilbert for his clear and needed reminder of Ordnance's role.

Regimental Spirit

To the Editors:

Enclosed is my check for five dollars and your familiar blue slip making me good for another year.

I don't believe I've ever written you to express my opinion of THE JOURNAL. To me it is the finest magazine of its kind I have ever seen. I wouldn't be without it. To an old soldier like me it keeps one well informed as to what is going on in the military world. I must admit I let myself get disturbed sometimes over some of the articles I read such as "What's Wrong With the Infantry." I'm afraid I agree with most of that particular article. One thing rather puzzles me, however, and that is, don't soldiers speak in terms of regiments any more?

As an example, the other day I met a soldier on the street wearing regimental insignia, or as it used to be called, a regimental crest. Being curious I asked him what regiment it represented and he didn't seem to know. There was a time when no matter what regiment you belonged to it was the 'Best damn regiment in the Army.' Today there doesn't seem to be that old regimental spirit.

One reason for this is, I am sure (and I have said this before), the lack of a regimental band. When they did away with the bands in the various regiments, I think

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they did away with half of the regimental spirit. I'm sort of hoping Ike may change this. He should know the value of music as a morale builder. Martial music is a morale builder in service and out. Let's get 'em back.

Well, I guess I've sounded off enough on this particular subject but I wonder if there are others who feel as I do.

CAPT. K. F. BOWEN

920 Potomac Ave.
Erie, Pa.

Junior Officers

To the Editors:

The dilution of quality caused by the expansion of the officer corps and the emphasis that has been placed on persuasive leadership in our Army have resulted in intemperate criticism being leveled at company grade officers.

Almost any complaint directed against junior officers receives immediate attention and widespread publicity. Your recent publication of the article "What's Wrong With the Infantry?" is one example of this deplorable state of affairs.

It is quite true that young officers need guidance and that our ranks contain many with undesirably low standards. I maintain that this situation can best be dealt with by glowing examples of dedication on the part of our senior officers and by a militant application of the reclassification system.

The publication of irresponsible criticism by an influential magazine such as the COMBAT FORCES JOURNAL results in demoralization of the officer corps and further weakening of the precarious state of discipline in our Army. I would be interested in hearing your reaction to these thoughts.

LT. HUBERT M. NICHOLSON, JR.

Artillery

Battery A, 33d FA Bn
APO 1, c/o PM
New York, New York

● We felt that the sergeant who criticized junior officers was overdoing it more than a little bit. But if a seasoned sergeant believes so deeply and earnestly that our junior officers are not all what they should be, should not his voice be heard so that his misconceptions may be corrected? We think the answer is yes, for if one sergeant believes this, so do others and indeed we have heard soldiers of all ranks say the same thing in the last few years. We would like to have concrete evidence in one case that the Sergeant's effusions about junior officers have resulted in a case of "weakened" discipline. We cast no reflections but we believe that every good junior officer will have such a hold on his men that they laugh off and disregard the criticism of the Sergeant and where (if there be) a junior officer such as the Sergeant described, discipline is probably so low already that what the Sergeant had to say could not make matters worse. And might make them better if the junior officer read it and took it to heart. Finally, let us make it clear that the staff thinks the junior officers in

today's Army are every bit as intelligent, aggressive, and professionally skilled as the junior officers of any generation since 1776.

Spice not Manualse

To the Editors:

Read your current issue and found Lt. Col. Waldon C. Winston, and his article, "Mobile Maintenance Made 'Em Roll," interesting and easy enough to understand.

Currently in Korea, the big spring thaw is probably giving everyone a hard time. In the other articles on types of transportation, only the types of transportation were covered, not drawbacks, not grinding hills, not extreme weather, extreme terrain conditions, not mud, ice, and mainly not a drop on the subject of maintenance, only figures, charts, and how the truck, jeep, tank, dozers, graders, and so forth, look, act, and what not, to conditions of combat or training, not to the sense that they need repair or parts, or main points that were covered in Colonel Winston's article.

Sure I can see putting some of these things into your magazine to add spice, but too much spice can ruin a good magazine.

Manuals are cut-and-dried. They have information needed only for reference. A reader such as I am, hasn't much time for trivialities, nor do I understand these trivialities, and thus I use only in your magazine what I understand, and understanding a magazine, and understanding a manual are two horses of different colors.

You can't satisfy everyone, but you can satisfy the majority. And it is my understanding that privates, corporals, and sergeants compose most of the Army, and to them your magazine serves its purpose, to keep them up to date, yet not behind because they can't understand, or they haven't time to go into the manual-like explanations.

I know that the manual has its place, but if the Army ran on the manuals it wouldn't be much of an Army. The higher the points of meaning to the soldier are placed, the more regard he has for his noncoms, his officers, his job. And that goes for the magazine as well. Your magazine is good . . . but.

It is not my intention to run a magazine, nor choose articles. I can suggest as your magazine suggests, and that is what I'm doing. I mean no offense, all I want is a magazine, not a manual.

I hope that is your purpose.

PFC JOHN HAMMERSLEY

Hq & 10th Trng Co.
3d Bn ERTC
Fort Belvoir, Va.

● It is, Private Hammersley, and we will keep a firm hand on the chart addicts from now on. Some will appear but they won't be charts that you'll find in the manuals. The Editors are proud that they have never picked out an "average" reader of CFJ—general, lieutenant colonel, lieutenant, sergeant or private. We try to interest and inform the thoughtful and appeal to the professional interest of all ranks and grades.

COMBAT FORCES JOURNAL

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U. S. ARMY COMBAT FORCES JOURNAL

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They Fought To Save Their

Colonel S. L. A. Marshall

WHEN the sun set on 30 November 1950, not one howitzer had gone through The Pass. Most of the infantry had either cleared the barrier or had moved to within seeing distance of it. But the artillery column was strung out all the way from the approach to the final ridge back to the jump-off area where, for lack of road space, some of its elements had not yet formed in procession.

Thus in the unforeseen situation, the artillery became the 2d Division's rear-guard, having to repel infantry boarders, and doing it in the dark. It had some infantry help, elements of 3d Battalion, 38th Infantry, which for lack of transport hadn't gone out with the rest of the regiment.

So it became the story of the fight of artillerymen to save their guns from the

... In our operations over thirty-five years, I have known of no braver episode than the fight by which the field and antiaircraft artillery elements of 2d Infantry Division—aided by a handful of infantry—broke out of Kunuri Gauntlet.

S. L. A. MARSHALL
13 March 1953

Chinese howling down the slopes of the ridges on both sides of the pass. Four elements of U. S. artillery were involved: the heavy 8-inch howitzers of the 17th Field Artillery Battalion, the medium 155s of the 503d Field Artillery Battalion, the 105s of the 37th and 38th FA battalions, and the quad .50s and 40mm guns of the 82d Antiaircraft Artillery Battalion.

The artillery tail of the column had to meet special hazards beyond what the lead parts of the column had experienced. Destroyed and burning vehicles lit up the night sky and the artillery had to make a swing-out in the darkness to skirt these fiery blocks in the dirt road. There were ditches on both sides and every swerve made by a truck or gun helped to break down the thin supporting crust of earth, increasing the likeli-

COLONEL S. L. A. MARSHALL, USAR (he is a brigadier general in the Michigan Civil Defense organization) needs no introduction to the regular readers of COMBAT FORCES JOURNAL. He gets his facts from the battlefield—and he has been on all of them since 1918, when he was the youngest second lieutenant in the AEF. In World War II he served in both the Pacific and Euro-



MARSHALL

pean theaters and he spent several months in Korea in 1950-51. In civilian life he is an editorial writer for the *Detroit News*. His books include: *Blitzkrieg*, *Armies on Wheels*, *Bastogne*, *Island Victory*, *Men Against Fire* and *The Mobility of the Soldier*. This article is arranged from a chapter of *The River and the Gauntlet*, to be published this month.

forfeited because the mover was riddled, and there was no other source of power. Perhaps not every man kept the trust and did his utmost; under battle's pressure, men are not found equal. But that which needs be remembered is that hundreds died or became missing in the effort to save machined metal which in the nature of the situation was beyond salvation.

In the record there is at least one index as to whether the artillery attrition was due to mortal terror more than to insuperable physical obstacles. Gun losses by the several battalions were in almost exact relation to the place of the battalion in the artillery column. Irrespective of weight, those which hit the trail earliest, when the road was least clogged by burning blocks and stalled heavy machinery, won through with the highest percentage of pieces. Those which trailed last found all doors closed to them. The road was to become a serpentine of rubble, wreckage and ruin.

KING Company, 38th Infantry, had been treated much as an orphan of the storm. Its 30 men had remained back in the jump-off area among the last artillery units, for lack of vehicles on which to move when the rest of the regiment rode through. Most of the 30 had managed to attach themselves to one battery or another of the 503d Artillery. The 503d was alerted for the start, then was re-deployed to fire positions to shell the most northern ridges, where late on 30 November the enemy steadily increased his mortar and machine-gun volume.

Lieutenant Blair Price of King continued to look for outgoing vehicles with room for the last few of his men. There was a wrecker alongside the road; he told Sergeant First Class Henry Seeman and four others to board it. The wrecker belonged to the 17th Field Artillery—the 8-inch how outfit—which hit the trail while 503d was still shooting. By dusk the 17th had moved about two miles; it was then stopped by the jammed traffic up ahead.

Looking to westward, the Americans saw a line of South Korean soldiers falling back down the ridge slope, one of a group which had been cut off earlier in the day. Lurching on another 500 yards, the big guns passed onto a flat, well swept by machine-gun fire. It did little damage to the train, however. All of the fire was coming from the right, and along that side, trucks, jeeps and kitchens, previously abandoned, afforded an almost continuous shield covering the column.

When the train stopped, the artillerymen dismounted, and sought ground

Guns

hood that the vehicles which came later would slip, go off balance, and either overturn or become wedged sideways in the ditch. Out of this hazard came the great part of the loss which followed. Artillerymen have a love for their guns which is perhaps stronger than the feeling of any other soldier for his weapon or any part of his equipment. That guns will never be deserted simply because danger threatens is a point of honor around which the artillery has largely built the solid discipline of its corps. These batteries were not less lacking in awareness of professional obligation than were others. But, as at Omaha Beachhead, where one battalion had lost its guns because they were beaten down into the sea, it happened this night that faithful gun crews suffered the same loss because their guns were beaten into earth beyond extrication, snared behind the funeral pyre of some other outfit or

The artilleryman and the infantryman struck fire together



MAJOR JOHN C. FRALISH



LIEUTENANT DOUGLAS D. GRINNELL

The ack-ack commanders furnished the running gunfire



LIEUTENANT COLONEL WALTER KILLILAE



CAPTAIN SIMON J. STEVENS

from which, with small arms, they could cover the crests of the hills on the right. It was a well-intended precaution, but as proved in the event, slightly misaimed. From the left there was sudden tumult. The ROKs, last seen in retreat down the ridge on the right, had crossed the road to rearward of the 17th, and then tried to move south across the paddy fields, parallel to the column. The Chinese had closed in on them from both flanks. As the artillerymen ran to that side of the road, they saw the ROKs streaming toward them at a run, while a line of Chinese skirmishers, formed like a rough crescent, moved pincers-fashion to close upon them. Someone near Seeman yelled: "Hold fire!" and someone else answered: "No! Fire like hell! Give it to them over the heads of the ROKs!" That was what they did. Some of the Koreans were shot down as they raced across the paddies; others gained sanctuary with the 17th.

But as the last man closed on the road, there was a crackling sound along the length of the train as fire from two machine guns on the ridge to leftward (range 600 yards) ripped into the sides of the vehicles. The Chinese skirmish line went flat and supported the machine guns with close-in rifle and tommy-gun fire. For the Americans, there was no going to the ditches. The 8-inch how movers mounted a caliber .50 and a .30 machine gun and the gunners stood to their weapons and kept pumping lead. The small-arms firers also stood as they worked their weapons, using the movers or the body of a truck for a rampart. Such was the roar and rattle of the fire that all other noise was drowned out. In a few minutes it was pitch dark;

the Chinese had had enough and the 17th had suffered its heaviest losses of the day. No man could see very much of how it had happened or what it had cost. But Sergeant Seeman made note that of the four men closest to him, two were shot through the leg, one through the chest, and the other in the shoulder.

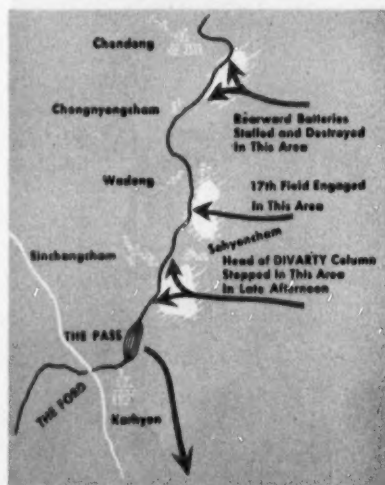
AGAIN the guns moved forward. On the wrecker, Seeman and the others began to worry as they felt the heavy wheels ride up and over "the soft bumps in the road." It was a terrifying sensation. They could have been sleeping bags; they might have been bodies. Seeman whispered to an aid man, Corporal "Doc" Hall: "What do you think?" Hall replied: "I'm thinking what you're thinking."

But if their fears were sound, there was still no help for it. The machines of his heavy how outfit were all terribly

weighty. When they moved they raised a dust cloud which would have made seeing difficult, even if the night had not closed down. As it continued down the gauntlet, it had to stay collected, against the likelihood that the Chinese would try another assault. The drivers could see almost nothing of the roadway. But they could follow the loom of the vehicle directly ahead. They moved along with their great chariots riding almost bumper to bumper. It would have been all but impossible for runners to operate between them, scanning the road surface.

Their fortune upgraded after that one stiff fire fight. Going through The Pass, they encountered several bursts of automatic fire, but were not hurt. When they started the descent, they concluded that they had about reached home base reasonably intact, and the men lit up smokes. Off to the leftward, several houses in Karhyon were afire. As the column turned sharply just before getting to the ford, an 8-inch how went off balance and careened into a 40-foot gully. Then a twin 40 went dead in the center of the column and had to be shunted over the embankment so that other vehicles could clear. Someone went into the gully to thermite the gun; lights were turned on to help him. Promptly two mortars in Karhyon opened fire upon the road; white phosphorus grenades came sailing in against several of the vehicles. Nothing more was needed to urge the column on its way. The lead guns rolled on and the men quit worrying about what had been lost by the roadside.

Yet what can be said in a few words, still required hours in the doing. The ford was almost an impasse, its south bank being about 10 feet high, with the track steeply graded and curved. Only one vehicle could be risked in the dip at one time, lest the whole column become boxed. Lieutenant Colonel Walter Killilae of the ack-ack was with Lieutenant Colonel Elmer Harrelson of the 17th when the howitzers came to this obstacle. By his account, it was 2100 when the first of 17th's train went through the ford and 2400 when the last vehicle had cleared it. Hence there was no swift dash through the fire from Karhyon for this outfit. The two officers crossed the ford and walked forward until they found a medium tank and one of Killilae's own M19s. These chariots were running north with the object of serving as tows to help the heavy stuff pull out of the stream bed and up the south embankment. Instead, they were diverted to shell Karhyon and so



The Kunuri Gauntlet



take the heat off the column during its struggle to clear the ford. In that mission they were effective. The Chinese fire ceased and the enemy seemed to have quit the village.

But the strain was still mountainous. The creek was about thirty yards across and three feet at its deepest. All of the lighter vehicles drowned out. They had to be manhandled out of the stream and up the grade beyond it. When the heavier stuff stalled in the water, they were towed out by medium tanks.

UP to the passage of the 17th Battalion, the enemy had repeatedly charged toward the road, but had not once succeeded in overrunning any fraction of the division. On the heels of the 17th's passing, this condition changed. Whereas at the southern end of the gauntlet the Chinese appeared to have become exhausted by their efforts of the afternoon, loosening their grip when the night fell, in the north the fury of the attack built up rapidly under the cover of dark.

The 37th Battalion, which followed behind the 17th, moving out at the same time as the few front runners from the 503d, lost ten guns during the journey. Some were hit and ruined by enemy fire. Others got hung up behind a block of debris in such way that they could not turn out and around. A few perhaps were lost in the dark when crews were killed and there was none to see and report.

The 38th Battalion, at the far end, last to get the call in the entire division, lost every gun and vehicle. It could not even get on the track, such was the chaos extending out over seven miles. There is no record of the retreat of this unit as a unit. Some of its men got back to Allied lines by traveling cross-country

under the cover of dark. Many did not. The 105s were left in enemy country. For this, it was said in parts of the American press that their action was discreditable, the consequence of bug-out fever. They could have escaped this charge had they been able to put wings on the tubes and fly with them beyond the encircling ridges.

Between the 37th and 38th was the main body of the 503d. The melancholy yet triumphant story of that battalion's effort to save its 155s is as filled with the travail of that night as anything which happened on the road to Sunchon.

When darkness fell, the battalion was still in position on both sides of the road firing at the same ridges near the village of Chongnyongcham which Colonel Charles C. Sloane's 9th Infantry and a force of ROKs had assaulted during the morning. In return, nothing was coming against the gun positions except an occasional mortar round. When the tail of the 37th's column passed by, the 503d march-ordered and followed them in column. There was still a little flock of infantrymen nesting with the artillery. Twenty-one men of Love Company, 38th Infantry, had been told that morning they would ride out on the vehicles of Baker Battery, and had stayed put. Love Company having lost all of its officers and senior noncoms, Lieutenant Douglas D. Grinnell of Item Company took charge.

THAT was fortunate. With the artillery there rode a young S3, Major John C. Fralish. These two men got together in the worst crisis of the ordeal, and struck fire in each other, like steel to flint. The decisive impact of just a few willing hands upon a disordered situa-

tion has seldom been more dramatically demonstrated than in what they did as a team.

The column got not more than one mile from its start when it was hit head-on by a large force of Chinese. From the ridges on the left and to the rear, there was a prolonged blowing of bugles. From directly in front, and close beside the road, several machine guns opened fire. Love Company was about midway in the serial. Grinnell ran forward to look over the situation. It was then that he met Fralish and was told that the column was confronted by a well-set roadblock of at least two machine guns and a considerable number of rifles. One wave of Chinese had rushed from the roadside directly upon the forward vehicles and guns. That was Baker Battery. All the shock of a violent local surprise had attended the action. The men in the forward battery had met the rush as best they could. For a few minutes there was a wild melee. A train of Korean refugees had been trudging beside the vehicles. In the darkness and confusion it had been impossible to distinguish friend from foe. Clubbing their rifles and carbines, the gun crews and others had jumped down and swung toward anyone who came at them. One refugee had knocked a rifle from the hands of Lieutenant John E. McCode just as he was firing at a Chinese a few yards away.

But the odds were all one way. The Chinese had come boring in with rifles, tommy guns and grenades. They were on the target: Baker Battery couldn't even see it. In the first flash seconds, the leading tractor and the rear tractor had been knocked out by explosive charges. The guns were then beset un-



LIEUTENANT COLONEL ELMER HARRELSON

til every man of Baker was either killed, wounded, captured or driven off. (This was accurate: only two officers and twenty men of Baker ultimately survived.) Boarding the vehicles, the enemy had looted the Battery from end to end and pitched its belongings to the roadway.

Fralish was in the middle of Headquarters Battery when Baker got hit. He walked to the sound of the fighting; the enemy had already pulled back before he reached the scene. Captain Darwin C. Dunn and First Sergeant Albert Dahrensbourg of HQ Battery had got there ahead of him. They told him that Second Lieutenant Peter T. Golden, Baker's trail officer, had gone forward to reconnoiter, taken a bullet through both legs, and couldn't make it back.

Several Korean houses, hard beside Baker's column, had been set afire and an ammunition truck in the middle of the battery was burning. The countryside was lighted for far around.

This was the situation when Grinnell got forward. He discussed it with Fralish; they concluded that unless they got prompt action and bucked through, the column would be totally destroyed.

Grinnell walked back toward his men. As he walked he could see shells exploding along the rear of the serial, and automatic fire pressing in against its sides. He already had a plan in mind. He had mentioned to Fralish that there were a number of ack-ack wagons behind them and if they could be brought forward, they might blast a way through. But neither Grinnell nor Fralish carried the weight of rank and both had an hour of sweat to go through before they realized this really didn't matter.

FRALISH still didn't know whether the Chinese, on leaving Baker Battery, had pulled back to the ridges or moved down the road to rig another ambush. His



MAJOR GEOFFREY LAVELL

alternatives depended on being sure of the answer. So he took this question to his commander, Major Geoffrey Lavell. But Lavell just shook his head in perplexity and said they'd better talk it over with Lieutenant Colonel R. J. O'Donnell of the 38th FA Battalion and Major Carl Kopischke, O'Donnell's executive officer.

To these three, Fralish put a direct question: "Shall we set everything in the column bumper-to-bumper, pour gasoline over all, torch it and go out fighting afoot, or shall we fight in place on a defensive perimeter?" The conference got nowhere. Both battalion commanders shrugged off the question. No one would take responsibility for decision. The conversation died.

A few minutes later mortar fire began falling on the center of the column. Kopischke told his men to drop trail and start firing on the ridge to the left from whence the mortar fire was coming.

They went into action right from the road. The artillery fire touched off four or five enemy machine guns along the high ground; there was a vast increase of noise, though the aim was wild and the fire went well overhead.

Fralish made another try, requesting O'Donnell and Lavell to go to the head of the column with him, look the scene over and decide on the spot whether to attempt to crash through, and what guns to use. They walked forward together.

As they reached the wreckage of Baker Battery and scanned forward, Fralish stood at the left of the second vehicle in the column. O'Donnell stayed in the shadow to right of it. Lavell hugged the far side of a wrecked hulk which had been shunted over toward the right-hand ditch.

From directly forward of them, not more than 40 yards away, an enemy machine gun opened fire. The burst was dead on. O'Donnell went down with four bullets in his abdomen and one in his shoulder. Lavell and Fralish went flat behind the vehicles nearest them. Fralish had missed disaster by an inch; one bullet trimmed his mustache without breaking the skin of his lip, though it left a red welt on his face which remained for several days. Lavell crawled past O'Donnell and on to Fralish. He said: "I looked him over—he's dead."

Fralish asked permission to wheel one or two of the 155s into position and open fire. He could hear the sounds of digging out beyond and it sounded not more than fifty feet away. Still doubtful that he was dealing with Chinese rather than with Baker men, he three times called: "Are you GIs?" The only effect of the challenge was to quiet the noise momentarily.

Lavell said it would be all right for him to put a howitzer into action against



the machine gun, if he wished. Further than that, he would not go. Fralish kept questioning him about whether he wanted to stand and fight or try a breakthrough. He merely shook his head as if greatly puzzled and said over and over: "I don't know." Shortly after that, Lavell wandered off, somewhere into the darkness, and his troops never saw him again.

His departure took place while Fralish was getting the first section of Charley Battery deployed into a rice paddy fifty yards off the road.

GRINNELL had gotten back to his men. There were at least two other stalwart spirits in this small party, Master Sergeant Leo G. Kelly and Corporal Roland W. Clatterbuck. Whatever Grinnell wanted done, they were ready to carry out. What encouraged the three of them was that while there was steady fire from the flanking ridges, it was not biting deeply into the sides of the column. Unlike the Chinese who had borne down Baker Battery, these Chinese weren't nerved for a pitfall. But the volume of fire was building steadily, and within recent minutes rifles from the low ground had joined the four mortars and four to five machine guns which were shooting at the road from the more distant hills.

Grinnell was still reflecting on his big idea; lacking authority, he still decided to go ahead with it, using persuasion. He sought out Captain Simon J. Stevens of Able Battery, 82d AAA Battalion, and in him found a kindred spirit. Stevens had taken a swing along the column to see how it was enduring the Chinese fire; he had counted twenty vehicles already set ablaze. Grinnell told him he believed the only way to save the column was to get the flak wagons forward and start shooting. Stevens needed no urging. He was looking only for a way to help. He picked out three quad .50s and two twin 40s and led them out. Grinnell rode along. On passing Love Company, Grinnell told Sergeant Kelly to round up the men and jump aboard the AA vehicles. He didn't want to lose track of them and, he reflected, a few riflemen might be needed up front later. Though it was a tight squeeze, they managed to double pass the stalled vehicles.

Before placing the 155s in the paddy field, Fralish had had the same flash inspiration as Grinnell. While the pieces were going into position, he sent Lieutenant Oleg V. Warnek to find Stevens and bring the flak wagons forward. Warnek met the Stevens-Grinnell task force



LIEUTENANT BLAIR PRICE

not far back; it was under full steam and proceeding toward the fire.

In the paddy field, Fralish was readying the No. 1 how. Charley Battery had some LMGs and he had put one on either side of the piece, besides deploying to his right eight men armed with carbines. Fralish personally bore-sighted the piece toward the enemy machine gun which he judged to be about seventy yards away. The No. 1 man stood with him between the trails as the big howitzer opened fire.

They got off three rounds. As the third shell emitted, Fralish saw the No. 1 man fall, and thought he had been

knocked down by the recoil. He reached down to give him a hand. Only then he realized that the figure on the ground had no head. He saw a clean hole in the shield of the gun; suddenly everything was explained. At the exact instant of the flash, an enemy rocket round had struck, disabled the piece, pierced the shield and decapitated the man holding the lanyard.

There was no time for shock from this experience for just then Stevens and Grinnell arrived with the AA battery. In five minutes the lead M19 was at the head of the column. Fralish showed the gunner where he thought the machine gun was nesting which had felled O'Donnell. The multiple-barreled weapon cut loose, searing the foreground. After an interval, fire stopped and Fralish walked forward; he found a ruined gun and six dead Chinese beside it. Then he led the M19 past the gun, through a deep ditch and back onto the road, with the other four flak wagons grouped close behind it. He, Warnek and Grinnell then instructed the gun crews; they were to keep moving, firing forward and to the flanks as they moved, with the lead vehicle aiming ahead, and the others alternately searing the flanks. They need not have worried; Stevens already had the idea and his crews were well in hand.

ONE particular thought oppressed Fralish. Lavell might have been wrong in saying that O'Donnell was dead. Fralish ran back to see. O'Donnell was conscious, though terribly wounded and in great pain. He was taking it gallantly and made light of his condition as Fralish talked to him. Fralish wanted to find a medic; but he was also under the urge to prod the other vehicles forward to where they could form behind the flak wagons. He started rearward on this dual mission. Meantime, Warnek came back, wrapped O'Donnell in a blanket, carried him forward and lashed him with ropes to the front of the lead M19. That was how O'Donnell rode through the gauntlet, and by some miracle survived.

By beating the bushes, the three musketeers—Grinnell, Fralish, and Warnek—got about 35 vehicles lined up behind the AA guns ready to make the break. Their hope was that when the elements to rearward saw that the road was being opened and that traffic was moving, they would fall in behind the battering ram and follow along. But it was a dim hope.

Looking north, Fralish saw vehicles burning far into the distance. He heard grenades exploding and knew that the

A NOTE ABOUT THE PICTURES

The editors would have very much liked to reproduce a picture of every person named in this memorable account of one of the most stirring actions fought by American arms. But that has proved to be impossible. Most of the photographs are from Signal Corps files. Exceptions are the pictures of Captain Stevens and Colonel Killilae, both furnished by Colonel Killilae, and the picture of Colonel Marshall, furnished by the *Detroit News*. In most instances the Signal Corps pictures were not formal or informal portraits but group photographs of one kind or another. In each such instance we have used only a small portion of the whole picture. And in several instances we have had to depend on the magic of the photoengraver to get any kind of reproduction.

The sketches are by Gil Walker, a young New York trained artist, who has served in the Army and who is now a civilian artist in the Department of the Army.

Chinese had at last closed directly on the road. There was a wild blowing of bugles which continued on and on. Mortar rounds of white phosphorus were exploding frequently onto the roadway. The rattle of small-arms fire continued.

He felt he could not prolong the roundup indefinitely with any hope of saving his own contingent and the guns protecting them. The task had been hard enough. Already he had shaken loose several jeeps and trucks wherein the driver was sitting dead at the wheel and the other riders were too weary or shocked to note or to replace him. He had carried the bodies to the roadside and then manhandled some other individual to behind the steering wheel. To all others, he had kept shouting, "You will keep moving and keep firing," until his voice was about gone. It was time to start.

Grinnell spread Love Company—twenty men—as skirmishers on both sides of the road, and with the ack-ack leading, the convoy started at a walking pace. Above the rattle of the guns, Grinnell found that it was impossible to make the gunners hear him as he shouted directions while moving with his own line across the paddy fields. So he hopped aboard one of the M19s, and when the convoy drew fire from the ridges, he told the flak gunners where to return it. But it was all too slow. By the time the column advanced 600 yards, the leaders knew that the pace itself was compounding the danger from the flank fire. They decided to mount up and barrel down the road as fast as the run could be made. They still expected that the right of way would be fairly clear of any impediment or block, as they knew nothing



MASTER SERGEANT JOHN F. SULLIVAN

about the struggle of the earlier serials.

For perhaps another thousand yards they made good speed. Then they slowed as they came to the first wrecked convoy. They saw the smouldering and ditched vehicles, and the debris littering the roadway. The flak wagons blistered the ridges on both sides of the road. Grinnell walked forward to take a close look at the scene of the pillage. He saw that the Chinese had systematically laid sleeping bags spaced out and crosswise of the road. But in the interstices of this corduroy there were also American wounded, lying flat across the road. It looked as if the enemy had dragged bags and men to this position, either to force the column to halt, or compel the American vehicles to bray their own wounded. Each ack-ack unit had a one-ton trailer

behind it; the wounded were loaded thereon. The convoy had to inch forward while the clearing was done, but the guns continued to pound the hills, and the enemy made little reply.

That was a break for one group. Corporal Weatherford and the score of men with him who had escaped the ambush at this spot were still holed up in the ravine to leftward of the road, waiting for help to arrive. They had just decided to take off cross-country when they saw the flak wagons coming toward them and sweeping the ridges.

Said Weatherford: "It was a wonderful sight. Until then, the Chinese on the ridges opposite us were riding high and seemed to be increasing in number. When the ack-ack hit them, they subsided completely." The party ran back to the road and jumped aboard the convoy.

At least thirty minutes were spent in clearing the wounded from this one block, Sergeant Kelly taking the lead in the work. He had no blankets or other material in which to wrap them, but stacked deep as they were, body heat possibly helped. It was about 2230 when the convoy got rolling again.

After a time they passed that part of the column which had been wrecked in late afternoon, several miles short of The Pass. The signs of pillage were as before, but here there were no American wounded. One thing made Grinnell's heart sink. The convoy passed successively the ruined MP vehicles, two abandoned tanks, several radio jeeps and about ten division Hq trucks and jeeps; the farther they went, the higher the echelon which had been hit. It came to these men, like a punch on the button, that the 2d Division had been destroyed and they were the only survivors with a chance of escape.

When they came to a vehicle, or series of hulks, which barred the road, all hands unloaded to join in the ditching. As they weaved in and out through the wreckage, sometimes careening against parts of it, almost no fire came against the front of the column. The ack-ack was doing its stuff; during the entire run to The Pass, the lead vehicles felt nothing except a sprinkling of rifle fire and three 3.5-inch bazooka rounds which hit nothing vital. The enemy reaction was as if they had concluded by this time that what remained of the division was blocked solid and nothing else would come over the road. For their forces still held the hills. The fire of the ack-ack alerted them, and they cut loose with rifles and machine guns in double doses against the tail of the



column. But they had taken to the ridge tops and most of the fire was high.

AS they topped the divide within The Pass (it was then in the early hours of morning) Fralish stopped the column. The Pass itself was relatively quiet, though one mortar and a few rifles were popping away from somewhere upslope. It was the scene beyond which gave Fralish pause. Karhyon was burning from end to end and the glare lighted the whole east facing of the ridge; there the countryside seemed to be swarming with Chinese, moving out in all directions like ants teeming from a bed. From east of the village a 76mm gun was firing toward the south exit.

Captain Stevens came forward; he had been jeeping along in the rear to keep the convoy closed up over the greater part of the distance. A council of war was held. Captain Charles S. Barbour, S2 of the 503d, had a map of the area. Fralish had a compass. They got down under a blanket and by the glow of a cigarette lighter studied the course which should be taken to get to Sunchon by cutting across the ridges. Since the wounded couldn't walk in any case, it was decided to send them in the vehicles past the village, leaving only the driver and a couple of guards aboard each unit. The able-bodied would strike off cross-country, thereby lightening the vehicles and giving the wounded a better chance. Stevens would take over the flak wagons, run them out first and plaster Karhyon as he passed. There were about 100 men in the column which formed to go afoot.

Stevens had a relatively simple yet dangerous job to do, and he went to it as promptly as he could get his column organized. The conflagration in Karhyon lit up the country far beyond the ford and put a spotlight on everything moving via the road, once The Pass was left behind. There was no option but to trust once again in the dampening effect of the ack-ack. On emerging into the open the flak wagons turned their full power against the village and the ridge beyond it; the barrage was sustained for perhaps 10 minutes; the results were not entirely happy. Stevens was personally directing the work of the lead wagon. Bullet fire came against it from both sides of the road. He headed for the ford, and splashed through it and up the south embankment without excessive difficulty. But behind him his train was already two fighting vehicles less. One M16 driver missed the turnout to the ford and the vehicle did a dive into the black hole where once the

bridge had stood. But it only dropped eight feet, its fall being cushioned by the wreckage of other vehicles which had made the same error. A second M16 was knocked out by enemy fire. Stevens went on a thousand yards and came to a friendly roadblock. He then doubled back to the ford and helped the final contingent of about 40 wounded to clear through it. These were the last vehicles to get through The Pass.

Fralish and his rifle column had climbed the embankment to the ridge saddle while Stevens was forming his column and getting under way. When they gained the crest the party became unaccountably noisy; some of the men wanted to talk; others moved carelessly, making quite a clatter. Fralish and Grinnell cautioned them but the racket continued. Fralish stopped the march, and said that the group would stay on that spot until dawn came.

The decision promptly exploded in his hands. By a fluke, Stevens, in turning the guns of the quad .50 against the ridge top after plastering the village, put his fire directly on Grinnell's men. They scattered like quail before a shotgun; whether any were killed by the fire is not known; the group dissolved as men ran pell-mell for cover. Each man got out as best he could.

CORPORAL CLATTERBUCK was soon walking alone along one of the ridge trails. For perhaps an hour he wandered aimlessly. Then his senses told him that he was "being trailed stealthily by four or five guys." He sank down behind a rock, waited for them to come up, and then pointing his rifle, challenged: "GIs or Chinks?" One man identified himself as a captain from the 503d. He said to Clatterbuck: "You say you're lost; well, what do you think I am?" They kept on walking, still with no idea in which direction they were moving. At last Clatterbuck heard a tank moving off in the distance and decided to guide on the sound. Some miles farther along his ear caught the noise of a truck being double-clutched. He said to the captain: "We must be right; no Chink could do that." As dawn broke, they came to a highway, pocked with tank tracks. They studied the dust pattern, figured which way the tanks had been moving, and followed them until they met an American outpost.

Grinnell and Fralish got headed in the same direction when the ack-ack stampeded the party and they picked up a few men as they moved along. Stevens' barrage had served one good purpose; they became reoriented on his



LIEUTENANT COLONEL ROBERT J. O'DONNELL

line of fire. So they made a wide circle around Karhyon, and getting well to east of it, started south for Sunchon. At 1500 the party had to stop and sleep for an hour; the men were completely spent. At dawn, from a high ridge, they looked back on Karhyon through field glasses and saw that it was now the site of a large enemy encampment, with many Chinese bivouacked in the nearby flat, and picket lines of Mongol ponies. To east of the ridge where they observed, they saw another village, near it a road, and on the road a column of about 70 men moving northwest. It was guessed that they were Chinese. A flight of F-80s moved on the column, as if to attack; but after circling several times, they flew away. For another hour the party marched southeast. Again looking eastward they saw a body of men, this time heading south. A spotter plane was circling them and the men were waving. The truth gradually dawned that this was the same column seen earlier, and that they had been mistaken for Chinese only because, having lost direction, they were marching toward enemy country. With the addition of this column and other small groups, the party grew to 250 men.

At this point Major Fralish assembled the party and announced that as the senior officer present he was taking command until the party reached friendly lines. He delegated Grinnell, the senior infantryman present, to handle tactical disposition for the march and to keep the column on the right compass bearing—determined by Fralish.

They waded the Taedong River; it was waist-deep and crusted with ice. Soon after, a liaison plane landed next

THEY CAME OUT . . . TO FIGHT AGAIN



The 82d AAA Weapons Battalion again supported the 38th Infantry —during the battle on Old Baldy in September 1952.



The 2d Division artillery pounds at the enemy. The Eighth Army has fired more artillery ammunition per gun than any army in history.



And the Doughboys of the 2d Infantry Division continued to footslog across Korea in the months following the fight at the Pass.

(The editors can't guarantee that these photographs from Korea are of the units of the 2d Division that were involved in the night battle in the Pass. But they are typical.)

to them on a sand bar, bringing a map, four cases of "C" rations, five gallons of water and first-aid supplies. The men had worked for half an hour clearing the sand bar of boulders so that the plane could put down. When it took off, the two worst cases among the wounded were aboard. That left about 40 wounded still with the column. But one touch from a friendly hand made all the difference; they took off with lightened step on the trail to Sunchon.

IN this way, the first group of so-called "stragglers" returned to the Division. It was but one incident among hundreds, each having its own special torment. Those who traveled the fastest probably had the best fortune. Many who came out late could recall almost nothing of what had happened to them.

As to men and guns, the statistics of loss in the gauntlet fight have no place in this narrative. In any case, they cannot be stated with precision. At Valley Forge, in the birth struggle of a nation, but 3,000 of 7,000 Continentals died or faded from the force in one terrible winter. In round figures, the wasting away of the 2d Division and its attachments is roughly comparable. But it all happened in one day.

The hospitals in the forward zone overflowed with its wounded. Captain William O. Burla, who had collected many of them from the road, found on arriving at the 5th Cavalry's collecting station south of Sunchon that there was no room for his charges. Already, there were 250 cases, lying on the ground in the winter cold, waiting for their turn on the table. He continued on with his caravan to the 15th Medical Battalion, just north of Pyongyang. There, too, the patients were lying in queue, waiting for the doctor's hand. He was told to take his vans on to the city, where there was another hospital. Lieutenant Maxson, the assistant battalion surgeon, who had also salvaged men from the roadside ditches, witnessed the streaming of the wounded into Sunchon. Of the British aid station and the 5th Cavalry's station he said: "I have never seen doctors work more heroically." More than 400 cases had been attended by morning. The waiting line still had not grown less.

That was on December 1. By Christmas Day, 2d Division was again a going concern, en route to a new battlefield. Its swift flight upward from its own ashes, even more than this story of struggle, bespeaks the character, courage and faith of those who survived, and the others still missing.

COMBAT FORCES JOURNAL

Agreement to Merge

AGREEMENT TO MERGE the two Associations has been reached by the U. S. Antiaircraft Association and your own Association, the Association of the U. S. Army. We hope the final fact of merger can soon be announced.

The members of the Antiaircraft Association voted about 9 to 1 in favor of merger. No vote was taken of our own membership. At the time the Infantry and FA Associations joined to form our present Association, the vote of both those groups was over 98 per cent in favor of a merger which would have then included the AA Association as well. And since that time there has been no noticeable change of opinion among our members.

THE GREAT MAJORITY of today's professional readers of a military journal devoted to any aspect of combat would much prefer to get the whole thing in one magazine—Armor-Artillery-Infantry, and all the technical sides of combat, too—Engineer, Chemical, Signal, etc.

And anybody who stops to think seriously about the relative merits of a single strong Army combat Association and several small ones will soon recognize that the best interests of the Army would be served by merger of all combat Associations. A single strong Association can far better represent the interest of the combat divisions, regiments, battalions, companies, and platoons and the different combat troops among them than a number of separate branch associa-

tions can. We only need to look, for example, at the capable and notable work done for the U. S. Marine Corps by the Marine Corps Association, and comparable associations in other services.

Today the Marine Corps Association boasts nearly 75,000 members—many more than our Army Association—and more power to them in their constant full support to a fighting combat corps.

THE PRINCIPAL REASON why our own Association has hardly half as many members is because in the Army we have remained separate in our effort. In most places, except combat itself, there is still far too much branch feeling. Branch *esprit*, branch pride, branch rivalry in accomplishment, are fine. But not branch mistrust, branch jealousy, and branch provincialism, which are still with us far too much.

So merger is the logical step toward the combat association strong enough and effective enough to speak and stand for the U. S. Army alongside the strong Associations of the Sister Services.

THE ASSOCIATION of the U. S. Army takes much pride in knowing that 9 out of 10 members of the U. S. Antiaircraft Association have expressed their belief that a joining of the two will be a wise and helpful move. We trust, indeed, that the final steps can soon be taken toward this completion of merger between the members of the AA-FA-Infantry Team.



The Goryunov 7.62mm machine gun is also used as a ground fire weapon. It is water-cooled, belt-fed and has a muzzle brake. Its rate of fire has been given by one authority as 500-600 rounds per minute for ground fire and up to 1200 rounds per minute for antiaircraft fire.

The CCF'S AAA

it's Soviet-inspired and not much to look at, but our Air Force finds it a pesky irritant

This is the Soviet-made 37mm AA gun, probably the basic light AA piece of the Chinese Communists. It can reach just short of 20,000 feet, throwing a pound and a half projectile with a muzzle velocity of 2,890 fps.



THE U.S. Air Force has made few official references to either the presence or effectiveness of Chinese Communist antiaircraft fire against either the B-29s that bomb from the Yalu southward or the planes that fly interdiction and close-support missions. An unofficial Air Force opinion is that the CCF's antiaircraft is pesky enough to require planners of bomber missions to provide planes that fly "anti-tank" missions. Further than that the Air Force doesn't go, officially or unofficially, and for very good reasons.

That doesn't tell us how "good" the CCF antiaircraft artillery is by a long shot. General Collins has told Congress: "In Korea, 87 per cent of the United Nations' planes lost in combat have been lost because of enemy ground fire." The number of our low-flying close-support planes that may have been winged by the lucky shot of a Chinese Red rifleman is probably nil, so the full 87 per cent may be attributed to the enemy's AA.

But that still doesn't tell us how "good" the CCF ack-ack really is. Nor do the weapons pictured on these two pages; all are conventional AA weapons of World War II vintage or earlier. There's nothing here that can stand up to our new AA weapons. Skilled anti-aircraftsmen could closely judge the effectiveness of the Chinese Red antiaircraft arm if they knew a little about the radar it uses. But little has been revealed. And no AA system is any better than its fire control methods. Certainly the CCF has shown nothing that compares to our T-33 fire control set which General Collins has described as being "more effective than World War II equipment [and] permits our weapons to fire at greater ranges and higher altitudes."

Little is known either about Chinese Communist AA organization and any formal tabulation is suspect because the CCF in certain particulars remains an army armed and serviced with a hodgepodge of weapons and equipment; some U.S. captured from the Chinese nationalists, some Japanese captured from the Japanese forces in China, some of

Chinese manufacture and origin (but modeled on well-known Western types), and some from the Soviet Union.

The CCF probably has an antiaircraft artillery company as part of the heavy weapons battalion of the infantry regiment. This company may be armed with Soviet-made 12.7mm DShK machine guns.

The Field Artillery division also has an AAA battalion, plus an AAA company in each field artillery regiment of the division. These field artillery divisions are usually field army or army group organizations.

The CCF antiaircraft organization for the defense of industrial areas and lines of communication hasn't been made public.

The Soviet Army's 85mm medium AA gun is also used by the CCF. It can fire a 20-pound projectile some 34,000 feet into the air and has a muzzle velocity of 2,620 fps. It weighs something less than five tons.





FOR BATTLEFIELD TEAMWORK

FSCC

FIRE SUPPORT COORDINATION CENTER

Captains Patrick W. Powers and Josiah A. Wallace, Jr.



ARTILLERY ASSISTANT S3
GUNNERY OFFICER



OUR forces today are confronted with real and potential enemies who have us outnumbered. So our attacking forces—infantry and armor—must rely heavily upon the fire power of artillery and tactical aviation. Fire power can be decisive only if it is properly and fully teamed with infantry and armor. But the team must be controlled and

its separate forces directed for the common good. Thus fire support coordination is a never-ending aggressive effort to exert a decisive influence on the course of battle.

This article will demonstrate techniques for combining fire power and fire support coordination in a key agency—the fire support coordination center (FSCC)—and to demonstrate how the FSCC performs its mission at the regimental level. This doctrine of fire support coordination is based on Department of the Army Training Circular No. 23, dated 3 August 1951, and proposed changes, dated 2 October 1952.

Fire Support Coordination

IN the infantry-tank-artillery team the force commander is responsible for the coordination of fire support. He delegates this critical task to the artillery commander since the artillery usually (and traditionally) supplies the greatest amount of fire

CAPTAINS PATRICK W. POWERS, Artillery, and JOSIAH A. WALLACE, JR., Infantry, are both instructors in the Tactics Section of the Department of Guided Missiles, The Artillery School, Fort Bliss. Captain Powers is a 1945 graduate of the Military Academy and took postgraduate work in mechanical engineering and guided missiles at the University of Southern California. Captain Wallace is a 1946 graduate of the Military Academy and has attended the officers' basic course at both The Infantry School and The Artillery School.

REINFORCING ARTILLERY
LIAISON OFFICER



support. Because his principal duty is to give fire support it is logical for the artillery commander to coordinate and direct other weapons that do the same thing. These are, principally, tactical air forces and naval gunfire.

The artillery commander must be aggressive and insist on an aggressive staff. This vigor will show itself in a continual effort to evaluate and plan every possible way of using all of the fire support weapons available to the force. In the heat of battle, infantry and armored unit commanders are more than busy controlling the fires and maneuvers of their own arms and they work under conditions which are not conducive to continual appraisal of the full capabilities of all fire support weapons. So the artillery commander and his staff must be alert for targets: enemy reserve units, hostile mortars or artillery, and any other threat real or potential, to the force. The impetus on fire support, like the impetus on logistical support, must be *from the rear to the front*. Artillery commanders and staffs should be continuously moving forward to find out what fires the assault units need and getting these fires to them. Useless, indeed, is the artillery battalion commander who organizes and emplaces his battalion's weapons, lays a wire net, announces that he is ready to fire, and then waits for something to happen!

AGGRESSIVENESS and vigor aren't enough. There must be also a high degree of professional ability and skill. The artillery commander and staff must know intimately the gunnery and tactics of all the weapons, and the capabilities and limitations of tactical air power, naval gunfire, and mortars. Moreover, all of the artilleryman's battle-winning tricks—the roving piece, the false preparation, the delicately timed counterpreparation—should be as familiar as an old shoe to a Doughboy. The S3 of his staff should be a master of fire plans. He should be able to draw up a battalion fire plan in support of a regiment in the attack in thirty minutes or less, and a counter-preparation plan in about the same time. A harassing and interdiction program should be an easy matter of twenty minutes. Furthermore, the S3 must master the technique of the commander's estimate and be able to write an operations order with routine dispatch.

The complement of the S3 is the S2, a most vital member of the fire support team. Of what value are expensive and effective weapons and piles of ammunition if we cannot get the targets to de-

stroy? The S2 (particularly the direct support battalion's S2) must be capable of making a rapid tactical study of terrain and weather in ten minutes or a more detailed one in perhaps a space of days. The intelligence plan, S2 worksheet, target file, hostile battery chart, and enemy capabilities worksheet (to name a few) should be daily habits. The S2 should reflect the commander's aggressive actions by searching for every last enemy soldier and weapon located within the zone of action of his unit. The other members of the staff must be just as competent as the S3 and S2, although they may not be as directly involved in actual fire support operations.

A high degree of cooperation among the officers of the artillery and infantry units is necessary. One of the best ways to promote cooperation is personal acquaintance. Unfortunately in the usual training phases, it is difficult for artillery officers to get to know their fellow officers in the infantry units. Commanders can get around this by insisting on social calls, informal coffee calls, or other ways of getting their officers together. Whatever technique is used, the commander will have to work hard to overcome the time-honored tendencies of all combat troops to bog down in the ad-

ministrative routine of training and garrison life. In combat, personal acquaintance between the units is sometimes extremely difficult, but nothing points up the needs of the infantry so sharply as a visit by the artillerymen to the infantry's CP or lines. One company commander from Korea recalled that the only artillery outfit that he could depend on all of the time was one that had a battery commander who visited him occasionally, checking up on his observers and the general situation.

The FSCC

THE fire support coordination center (FSCC) is the operating agency of the force commander. In it representatives of the command and the fire support agencies—artillery, air, and navy—together plan, coordinate, and integrate fire support. The FSCC is organized by the artillery commander, who is designated as the coordinator at the regimental (or combat team), division, and corps levels. The FSCC is not a TO&E organization but is established with whatever personnel and equipment are available. It provides the force commander with coordinated advice and recommendations for the most effective use of the supporting arms, and efficient min-

DUTIES OF THE FSCC STAFF

FIRE SUPPORT COORDINATOR (Artillery Commander)

Formulates the general concept of fire support—coordinates this with the infantry S3
Integrates the fire plans of all fire support agencies into the fire support plan

ARTILLERY S3

Directly supervises the operation of the FSCC
Prepares the artillery fire plan

ARTILLERY ASSISTANT S3

Supervises the gunnery functions of the FDC

ARTILLERY S2

Searches for any and all targets on the battlefield
Supervises maintenance of the situation map and target file

NAVAL GUNFIRE LIAISON OFFICER

Prepares the naval gunfire plan
Advises on the employment of naval gunfire

FORWARD AIR CONTROLLER (FAC)

As a member of the TACP (Tactical Air Control Party), he directs air support onto the target
Advises on the employment of tactical air

REINFORCING ARTILLERY LIAISON OFFICER

Assists the FSCC in employing the fires of his artillery battalion

ute-to-minute control over all available fire support. Most important, it directs the fire power of all the supporting arms. The FSCC can be located at either the artillery headquarters or the supported force headquarters. It may or may not include the artillery fire direction center (FDC). The actual location and composition of the FSCC is up to the force commander. In this article we assume that the FSCC of an infantry regiment is at the direct support artillery battalion headquarters which includes the FDC. Good coordination can be achieved with an FSCC located at either the infantry or artillery headquarters if the staff officers assigned to the FSCC are willing to make the system work. The personnel directly involved are shown in the picture diagram on the opening pages of this article. The artillery commander as "the coordinator" is not shown since he is up with the force commander at the regimental OP during the critical phases of an operation. In fact, the artillery commander will seldom be in the FSCC since he must also visit forward outposts frequently, make inspections of his batteries regularly, and fly over the battlefield every two or three days. He will probably be at the FSCC in the evenings to direct the fire planning and to attend briefings, and again early in the mornings for a briefing before departing for the force commander's CP.

To take a closer look at the personnel of the FSCC and see just what their more important duties are, study the chart on the opposite page.

Observe that it is the S3 who supervises the FSCC and during an operation makes the important decisions of what weapons will attack targets of opportunity. A cardinal rule: the S3 (or whoever is directing the FSCC) should never become involved in the gunnery aspects of a particular fire mission. Reason: he is likely to become so engrossed with this smaller problem that he neglects the overall functioning of the FSCC. To assist the S3, the artillery commander has given him the fire support plan, the weighted effort of the attacking units, and a list of target priorities.

To be effective, fire support requires detailed planning based on the support requirements of the regiment. This planning is a continuous process and must be consistent with the rapidly changing requirements of battle. Before detailed plans are made, a general concept of fire support based on the plan of maneuver is formulated by the artillery battalion commander after his daily visit to the regimental CP. This general concept includes such items as the bulk

Spend with Caution

In the heat of combat, soldiers naturally forgot that they were taxpayers as well as fighting men, but the Ordnance Research and Development staff realized that they must keep costs in mind when planning new weapons. One of its officers told a committee of the Bureau of the Budget "... we are almost as interested in Dun and Bradstreet as we are in American men of science." The balance to be maintained between the armament program and the national economy as a whole had, of course, to be determined by national policy. For the Ordnance Research and Development Division, the problem remained how to carry out any policy when finally settled.

DR. CONSTANCE McL. GREEN
Historian, Research and
Development Board,
Department of Defense
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of fires to be delivered, the weighted effort, and the types of targets to get priority. When this is known the fire support plan, consisting of the fire plans of the available fire support agencies (to include the necessary coordination), is drawn up.

This fire support plan is concerned with the attack of *pre-planned* targets. Here a definite decision is made after measured evaluation of the target and the fire support available. The designated agency to supply the fires is then informed—probably on the preceding day—and the necessary orders are issued.

To meet the needs of the assaulting units during an operation, the FSCC directs the attack on *targets of opportunity* that appear during battle. Rapid decisions are necessary. If possible, the supporting artillery should be considered first, then naval gunfire if available, and last, close air support. This is based on many factors which may include: effect desired, availability of supporting weapons, weather and terrain, and time. When the S3 wants to use a fire support weapon other than that specifically requested by the force commander, his concurrence must be obtained.

FSCC in Action

PROBABLY the best way to see how an-FSCC functions—short of visiting one (probably prohibited by the FSCC's SOP)—is to study the record of one that has successfully operated in combat.

Let's examine, then, the FSCC of a regimental combat team in Korea, both from a physical arrangement and a twenty-four-hour sequence of events. The S3 is not at his desk but in the middle of the tent directing the unit. The assistant S3 is doing his gunnery job at the firing charts. Able, Baker, Charlie, and K radio channels are located conveniently for fire direction as well as being handy to the TACP. The maps and S2 data are well displayed, visible to the S3, and always in the same relative position.

Here is the way a day in this FSCC might turn out. Assume that the infantry attack starts at 0700 and there is no naval gunfire available.

table { border: none; width: 100%; }
tr>
 0400 | Artillery harassing and interdiction fires cease || 0430-0700 | Artillery preparation fires for the attack |
0630	Air OP over the area Artillery battalion commander goes to the regimental OP
0700	Artillery preparation fires drop to initial objectives until infantry reaches assault positions and then are lifted on call.
0700	Air strikes coordinated with preparation fires
0700	Search for hostile mortars and artillery becomes more active as shell reports come in
0700	On call missions for artillery forward observers and liaison officers Targets of opportunity for artillery and tactical air (now the FSCC begins to handle missions requiring S3 decisions)
0830	Deep visual reconnaissance by tactical air (requested and controlled by artillery S2 at the FSCC)
0930	Defensive fires placed beyond the initial objectives when reached by the infantry
0930	Artillery S3 implements any changes in the fire support plan as determined by the coordinator Continue search for hostile mortars, artillery, CPs, and reserves
1500	Begin planning of harassing and interdiction fires Send plans to general support and/or reinforcing artillery battalion
1600	Begin planning of defensive fires (also counter-preparation)
1700	Complete registration or checking of defensive fires Plan air support needed for the following day and forward request to include photo coverage to the JOC
1700-1800	Make up PIR (periodic intelligence report) and POR

BLUEPRINT FOR TRAINING

What to Do

Obtain a high standard of professional ability on the part of the artillery staff—particularly the S2 and S3

Build up close personal acquaintanceship between officers of infantry, armor and artillery units—particularly among the staff officers

Get the necessary furniture for the FSCC

Decide on internal arrangement of FSCC

Achieve a high degree of operating efficiency within the FSCC

Sell the FSCC to all members of the infantry-tank-artillery team

How to Do It

Unit schools
Use of correspondence courses provided by TAS and TIS
Informal instruction given by the commander to his staff

Exchange tours for certain training problems (infantry officers attend artillery service practice; artillery officers attend infantry company problem).
"Joint coffee calls" at a unit mess at least once a week. Infantry and artillery alternate as hosts.
Informal athletic games
Required social calls

Tent-M/R as PCS property
Radios and phones—TO&E
Fire direction equipment and drafting supplies—TO&E
Folding tables and chairs—PCS and TO&E
Three large mapboards—8 feet by 4 feet
Lighting system

Move equipment around to suit yourself, but—
S3 must be able to easily see all maps and charts, and phones and radios must be easily reached
Have enlisted personnel practice setting up FSCC—tent and equipment—until they can make the complete installation in a reasonable length of time (30 minutes)

Set up and practice drills for FSCC
Use the FSCC in every RSOP, CPX and service practice which the artillery battalion or infantry regiment conducts

Conduct classes to orient all officers
Provide demonstrations of the FSCC in operation for all officers and key NCOs.

(periodic operations report)
Make intelligence and S3 estimate of the situation to be used in evening briefing and fire planning
1800 Begin harassing and interdiction fires
1900 Briefing by artillery battalion commander (after his return from the regimental CP) of battery commanders and his staff
1930 Artillery battalion commander's order
2000-2200 Make up the fire plan for the next day. Distribute to general support and/or reinforcing artillery battalion
Completion of intelligence plan for the next day
Next Day
0430 Artillery preparation fires for the attack

FROM this brief glimpse of a combat FSCC several important training lessons can be observed. First, after several days of such routine, fatigue begins to cut down the efficiency of the organization. Then it is advantageous to have men cross-trained in other tasks. Secondly, the vital decisions made by the S3 point out once again the high degree of training and thorough professional ability that he must possess. The use of a squad tent is going to be unpopular with many people. They will complain that it is a big target and difficult to erect. They are right, but it is the best tentage available in which to house the FSCC. The FSCC in Korea that we just looked at had two strictly enforced rules: no eating in the tent and no loaf-

ing. The latter refers to the visitors who wander in to see what is going on—and end up getting in the way.

To illustrate what might be considered the maximum coordination achieved by this agency, here is an excerpt from combat. Shortly after the airborne operation at Nunsan-ni in March, 1951, the 187th Airborne Combat Team moved across the front of the 3d Division into the valley north of Uijongbu and began attacking a hill about 700 meters high. By early afternoon on the day of the attack, the following operations were going on simultaneously in the FSCC of the 674th Airborne Field Artillery Battalion—the direct support battalion of the 187th:

- The FOs were adjusting close support missions fired by the direct support battalion

- The air OP of the 674th Airborne Field Artillery was adjusting the 8-inch howitzers of the 17th Field Artillery on some 76mm guns on counterbattery missions. To execute these missions, the air OP sent fire commands to the liaison officer from the 17th FA at the 674th FSCC. The liaison officer then phoned them to the 17th FA FDC.

- The TACPs with the rifle battalions were controlling close support fighter strikes

- An F-80 pilot who had fired all his ammunition was orbiting over the battlefield and noticed approximately a company of enemy soldiers attempting to withdraw down the north slope of the hill. This pilot radioed fire commands to the TACP at the FSCC where a liaison officer from a 155mm howitzer battalion phoned them on to his battalion and a successful attack was made on the target.

- The mosquito aircraft was being controlled by the artillery S2 and the S3 air to provide deep observation coverage of the battlefield

- The S3 air and the artillery S3 were continuously estimating the need for additional air support and requesting it from JOC.

ONLY in training can the units concerned get to know and put their confidence in the FSCC as an excellent means to control those fires that the infantry and armor must have. The chart on this page, "Blueprint for Training," suggests steps to be taken to make the FSCC an instrument for so controlling and directing fire power that our Army will dominate any battleground on which it is sent to fight.



Sandbagged M55 quad .50 machine guns in Korea during the summer of 1950.

AA MAKES THE TEAM

LIEUTENANT COLONEL RICHARD W. OWEN

FOUR days after the North Korean Army crossed the 38th parallel three AA officers and thirty-two men equipped with four M55s, quadruple caliber .50 machine guns, arrived at Suwon airstrip and hurriedly established defensive positions.

They had little time to wait. At 1615,

LIEUTENANT COLONEL RICHARD W. OWEN, Artillery, recently completed a four-year tour as Associate Editor of the *Antiaircraft Journal*. In World War II he served in Europe as an AAA group executive and commanded an automatic weapons battalion.

... an Antiaircraft Artillery detachment spearheaded the Army combat units committed to action in Korea.

ANTIAIRCRAFT JOURNAL
September-October 1950.

four enemy planes appeared, looking for all the world like U. S. Mustangs. In a matter of seconds the enemy came in at about 1400 feet over the runway. They made four passes, dropping three medium-light bombs and strafed the field.

The quad fifties opened up and one Red plane crashed beyond the field. Another, obviously crippled, limped north, losing altitude on the way. Thus, first blood to be drawn by the U. S. Army in Korea can be credited to Captain Frank J. McCabe and his hastily assembled detachment of antiaircraftmen.

The machine gun crews did not es-

cape unscathed in this, their first fight. Six Purple Hearts were awarded to Captain McCabe and five others who received superficial wounds in the few minutes that the action lasted.

This was a short-lived defense. Early the next day, 30 June, evacuation orders were received, the guns destroyed and the little unit moved south. They returned to Japan barely five days later to rejoin their battalion and prepare for the next phase.

IN the days to come it became apparent that antiaircraft artillery with its specialized weapons would fill an entirely different role than sweating out enemy air attacks. It was to become a powerful support weapon for infantry and field artillery. While some of the tactics and technique developed in the heartbreaking days when space was being traded for time, and the Pusan perimeter defense seemed a forlorn hope, actually the AAA had demonstrated their ground support potential from the jungles of the South Pacific to Africa, Normandy and the Battle for the Rhineland in World War II.

As the occupation troops in Japan were being shipped to the Korean front and divisions in the States were alerted and equipped for early departure, the hard pressed UN troops fighting desperately to stem the Red surge quickly recognized the effectiveness of so much fire power and welcomed the AAA gunners and their "meat choppers" with ever mounting enthusiasm.

The events that followed as they applied to the antiaircraft role were faithfully chronicled in the *Antiaircraft*

Journal by Major General William F. Marquat, antiaircraft advisor on General MacArthur's Far Eastern staff, and heavily supplemented by action accounts from the Korean battle fronts.

FLEXIBILITY is the one outstanding characteristic of AAA. Its arsenal of weapons, its speed of transport and the devastating volume of accurate fire that can be brought to bear on enemy targets in the air and on the ground serve to justify the place it has earned in the infantry-armor-artillery combat team.

At no time since the beginning of hostilities in Korea has the primary mission of AAA been forgotten. While the Red air force, with Soviet-made planes, has at all times had the capability of posing a serious threat to the port of Pusan, to UN airfields in both forward and rear areas, and to any and all supply dumps and communications routes and centers, it has rarely directed air attacks against any of these vital installations. Despite this, AAA defenses have constantly been established and prepared for such attacks should they come.

The heavy action of AAA has been almost entirely with the combat divisions, furnishing fire support to field artillery and giving direct support to infantry in defensive and offensive roles.

In the earliest days, the accent was on the defensive. Such action involved the defense of river crossings, roads and defiles to protect the routes along which Eighth Army forces were giving ground. One of the most effective defense methods devised against enemy infiltration and enveloping tactics was the use made of antiaircraft artillery automatic weap-

ons in a strong perimeter defense. In one of the early articles in the *AA Journal*, Lieutenant Lowell H. Beilsmith reported:

While with the FA batteries (one section per battery) our tracks performed frequent ground support missions. We pinned the enemy down, generally in defense, occasionally in support of both field artillery and infantry. We inflicted a great number of casualties on small and large groups of the enemy, especially when they made assaults upon the relatively vulnerable field artillery positions. We often killed Koreans within twenty yards of our tracks. We found a great need for outposts to protect our tracks from surprise. In one instance, an alert rifleman on outpost during dark hours, saved an M15 from surprise by three North Koreans dressed in civilian clothes. They were carrying new burp guns. We believe in twenty-four hours guards on the tracks and outposts at least a few yards from the tracks, even if only a lone rifleman.

Small wonder that the M15 half-track with its hard-hitting machine guns would be a prime target for enemy attack. The damage they were capable of inflicting upon the Communists caused them to be singled out for destruction at almost any sacrifice. The tracks, of course, were extremely vulnerable. The high silhouette and lack of protective armor for the gun crews, made them a favorable target for the Reds, and casualties were high among the exposed crew members.

As the Korean action progressed and reinforcements arrived to bolster the UN forces, antiaircraft units shook down to a method of operating that made them an integral part of the team. In his second report on "Automatic Artillery in Korea," in the January-February 1951 issue of the *AA Journal*, General Marquat wrote:

No longer is there a need for selling the antiaircraft artillery in ground sup-

These were the first 90mm guns to go into action in Korea. The time: 16 September 1950; the place: near Taegu; the outfit: Battery C, 68th AAA Gun Battalion.

port roles. These troops have proved their worth in multifold instances in terrific combat in which they have suffered severe losses in relieving critical situations.

WHILE the half-tracks of the M15s and the M19s (twin 40mm on a light tank chassis) were churning up the dust of Korean roads and encountering other



terrain difficulties such as rice paddies and rugged mountainsides, the 90mm guns were also contributing to enemy discomfort with their rapid rate of high-velocity fire.

The 10th AAA Group, under command of Colonel William H. Hennig, controlled all of the non-divisional anti-aircraft units in Korea, served as a division artillery for the 1st ROK Division and functioned as AAA advisors on the staff of the Eighth Army Artillery and the Fifth Air Force—a variety of command and staff responsibilities never before encountered by a single group headquarters. Such a multiplicity of activities would normally accrue to a brigade or higher anti-aircraft command. But in Korea the unorthodox was the general rule.

According to a periodic report from a 90mm gun battalion, received from Colonel Hennig and published in the *AA Journal*, the following is an account of an operation in support of the 1st ROK Division:

The enemy, an estimated two divisions of Chinese Communists, launched a three-prong attack at 1715 hours. . . .

The battalion expended 1,151 rounds of ammunition on 92 fire missions during the 24-hour period ending 1800 hours 1 November 1950, the period prior to the general attack. These fire missions consisted mainly of harassing and interdicting fire against the enemy and repulsing enemy cavalry charges estimated at one thousand strong.

Between 1830 and 2320 1 November, this battalion expended 1,319 rounds on 75 fire missions. This averages a fire mission every three minutes and fifty-one seconds.

The terrific rate of ammunition expenditure posed another problem. These AAA units were normally supplied with basic loads of ammo computed at rates of fire to be expected in the few fleeting seconds when aerial targets are within range. To consume shells at the rates indicated in this and many another ground support shoot, placed a prodigious strain upon available transport to resupply the ammunition expended.

These and other problems involving maintenance of equipment in difficult terrain and weather were met and solutions were found, usually by the trial-and-error method of "field expedients."

The January 1953 issue of the *COMBAT FORCES JOURNAL* contained the article "Roadblock" by Major John C. Fralish, describing the action in which the 2d Infantry Division was furiously attacked on 25 November 1950. Lieutenant Colonel Walter Killilae, commander of the 82d AAA AW Battalion (SP), wrote a brief account of the ac-

tion, particularly the AAA phase, in the March-April 1951 issue of the *Antiaircraft Journal*.

EARLY March of 1951 found the 21st AAA AW Battalion, commanded by Lieutenant Colonel Charles W. Henry, assigned to the 25th Infantry Division.

Self-propelled quad .50s and twin 40s of the 7th Division AA battalion near Yong Jon Ni in September 1950.

Unlike many other units with infantry divisions, the 21st was equipped solely with M16 half-tracks, mounting quad caliber .50 machine guns. The battalion's armament of sixty-four of these vehicles was capable of firing more than 140,000 rounds per minute. Colonel Henry had told his troops on the eve of their departure from Japan in January, "You are good anti-aircraftsmen, and if you can shoot down a fast-moving airplane, you can shoot down anything!"

The battalion soon made these words good in a variety of missions in their ground role. One of the outstanding operations as reported in the July-August 1951 issue of the *Antiaircraft Journal* involved the Han River crossing of the 25th Division. To quote:

There was no cover and our crews occupied positions during darkness the night before crossing. At H minus twenty, while darkness still obscured the far bank of the river, our guns joined the artillery in saturating predetermined sectors of the enemy shore. At H Hour the artillery lifted and the far shore became visible. As the assault troops crossed the river in boats, our guns delivered covering fire. After the infantry gained a beachhead, they fired on the flanks and at targets of opportunity.

For the initial phase of the crossing all weapons were under regimental control. After ferries and bridges became available, our weapons reverted to infantry battalion control and joined tanks and infantry on the far shore to patrol forward to search out the enemy.

Statistics for the battalion resulting from the river crossing were: 7-10 March: Enemy: 641 certified killed; 1,077 additional estimated killed; prisoners of war, seven; casualties sustained: wounded in action, three.

OF necessity, in presenting the AAA contribution to recent action in the field, we have paid scant attention to its primary mission: shooting down or driving off enemy aircraft.

Since recent experience in Korea has kept this activity to a minimum, there



is little of interest to report on that side of the ledger. AAA weapons can and do man the defense of key installations.

This type of guard duty is of prime necessity in these anxious days of more or less cold war. In Korea, our AAA units rotate between anti-aircraft defended installations and front-line positions where, within the limitations of the static warfare now being conducted, they engage in "bunker-busting" operations. The guns were well dug in and sited to bring fire upon Communist positions and break up Red troop concentrations.

Except in degree and in detail, all of the lessons learned in Korea in connection with the anti-aircraft potential were demonstrated in World War II. The hedgerows of Normandy were liberally sprayed with AAA automatic weapons and the Germans used dual-purpose weapons for both anti-aircraft and ground support. The much dreaded German 88 proved extremely effective in the two roles and their lighter caliber guns were used against low-flying planes and ground personnel interchangeably.

THE future of anti-aircraft artillery holds an even greater fascination. So far no enemy of the United States has been subjected to the fire of the Sky-sweeper, the 75mm automatic anti-aircraft gun. But we have this weapon today and battalions are being formed and trained at Fort Bliss to man this new and powerful gun.

In the guided missile field, the new anti-aircraft rocket, the NIKE, promises to solve much of the AAA defense problem against high-speed jet bombers, and the artillery's newest long-range cannon, capable of firing shells with atomic warheads, has yet to be used against live targets.

THE AMMUNITION HEARINGS

Guns and/or Butter

Isn't it true that if we adopt, as national policy, the fact that we can have one hand full of fighting a war, and the other full of television sets and butter, then every time we find we are short of something we will just change over and put some of the butter into the production of military items? Wouldn't that be logical?—SENATOR W. STUART SYMINGTON

A FEW pieces of testimony from the 75,000-word printed record of the hearings by the Senate Committee on Armed Services puts the whole controversy over the ammunition shortage in the Far East in perspective and sums it up nicely.

First, General Van Fleet on 5 March in response to a question by Senator Hunt of Wyoming said:

There has been a serious shortage of ammunition ever since I have been in Korea; there has been a critical shortage at times. There is today a serious shortage of some items of ammunition, but not all, and I can go into the details of that with my proof later.

That statement established the basis for the hearings. But perspective was given on 10 March when General Collins and officials from the Pentagon testified. Here are a number of sentences from the opening statement by General Collins;

... when considering the ammunition situation, responsible authorities in Washington must consider not only each military theater of operations but the global situation as well. ... Most of our forces are in the Far East and Europe, but others are guarding vital outposts elsewhere throughout the world. The ammunition reserve stocks necessary, both overseas and in the United States, to back up these forces are of tremendous importance. ... The fighting in Korea is,

of course, of the gravest concern to all of us. However, any examination of ammunition supplies in Korea cannot be isolated from our ammunition supplies worldwide. ...

... the reserves of certain kinds of artillery ammunition in the Far East Command have not been as great as we would like to have had them during the past year and a half, even though Congress has appropriated all the money asked of it. Our difficulties are practically all traceable to the fact that we have been fighting a large-scale war in Korea in "peacetime."

... Our problem has always been—and this has often been stated publicly—that we have not been able to build our ammunition reserve stockages to the point where we feel they should be. On the other hand, there has never been a shortage of ammunition in the hands of our troops, unless in some isolated instance because of local difficulties of distribution, either to repel an attack that actually developed or to conduct our own operations.

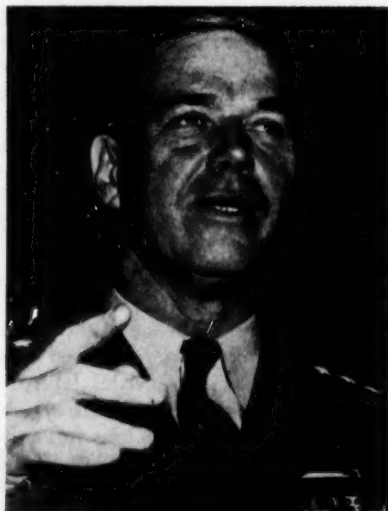
That the two generals were in essential agreement is clear when General Van Fleet stated later in the hearings:

... there has always been an adequate supply of ammunition, including grenades and mortars, in the hands of the troops along the battle front. We keep that supply filled up regardless of how much there is in the rear, so that the man is always protected; and we authorized the lower units to shoot whatever it takes to save lives; but this critical level that we are talking about does exist in the Far East, and because the full supply is not there, it means the men at the



GENERAL J. LAWTON COLLINS

"We have been fighting a large-scale war in Korea in 'peacetime.'"



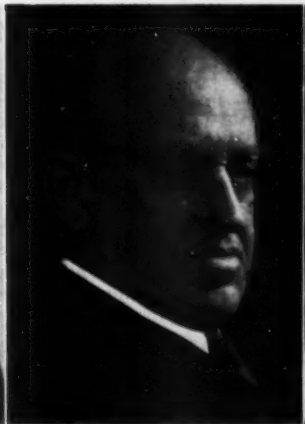
GENERAL JAMES A. VAN FLEET

"There has always been an adequate supply of ammunition, including grenades and mortars, in the hands of the troops along the battle front."

EIGHT MEMBERS OF THE SENATE ARMED SERVICES COMMITTEE



SEN. LEVERETT SALTONSTALL



SEN. RALPH E. FLANDERS



SEN. HARRY BYRD



SEN. RICHARD B. RUSSELL



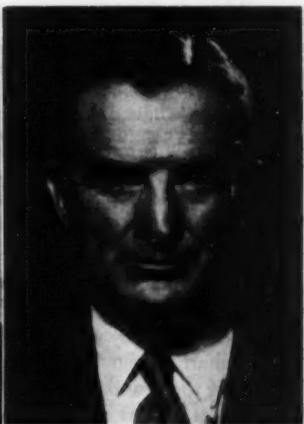
SEN. JOHN C. STENNIS



SEN. MARGARET CHASE SMITH



SEN. FRANCIS CASE



SEN. W. STUART SYMINGTON

front don't get an allowance to initiate other actions, merely a protective action to save themselves. They have to be in trouble in order to shoot. . . . So, I say that is a critical shortage that exists today, and there is not an adequate amount to take care of a situation that might develop.

To this General Collins replied:

I generally agree with General Van Fleet on that point; that is, our reserve stock levels are not what we want. . . .

The thing that we do not have is the stock levels back of the Eighth Army, but that is a different story than the business of—what have you got in the hands of the troops; and I am delighted that we now have in the record the statement that General Van Fleet has made. I think it is a most important statement, and I ask you . . . to please read it now.

Artillery war—of heavier calibers

THE record of the hearings makes it clear that the Korean war is, as General Van Fleet put it at one point, "an artillery battle [and an air war—as he said elsewhere] rather than an infantry battle, and that accounts for why we need to shoot more, and why we do shoot far more than the enemy does."

Both General Van Fleet and General Collins emphasized that we fire about six times as many shells as the enemy, despite the fact that the enemy has more guns than we have.

As General Van Fleet put it:

In the rate of fire we exceed the enemy; that is, from the tubes that we have, we get a greater performance from them because we have a greater supply of ammunition than the enemy. It is the only pressure we can put on the enemy.

Then, again, we have opportunities for the use of them which the enemy does not have. We have flexibility, we have observation, we have air observation, putting a liaison plane in the air that sees targets well behind enemy lines, targets of opportunity, men moving in the open, truck columns, which we can fire at, if we have the ammunition. The enemy does not have that advantage over us. He knows nothing except the front line and what he gets through spies.

In addition, we have targets which we get from photography. We get a complete coverage of the front by photography that will show you enemy installations and supply dumps; therefore, we take them under fire by both artillery and air, so we have a use for artillery, and are using it, and it is the main pressure that we put on the enemy at this time, and it has been for many months. Therefore, we are exploit-

ing such advantages as we have by having superior artillery, and means of employing it.

As to the amount of artillery being fired in Korea, General Collins reported:

... during one operation over there, according to our reports, we fired in one operation that lasted a period of about three weeks, we fired a half million rounds of 105 ammunition in support of an operation that was essentially a battalion attack, a half million rounds.

As our reserves fell off, and it became increasingly evident that the war in Korea was likely to be prolonged, it became necessary to exercise firm controls over the firing of ammunition through a system of allocation or rationing. But even with such a system in effect, let me illustrate the intensity with which the Korean conflict has raged. From June 1950—when fighting began—to December 31, 1952, last December, we have fired against the Communists in Korea the following amounts of ammunition: More than 600,000 tons of 105-millimeter ammunition; more than 300,000 tons of 155-millimeter ammunition; more than 75,000 tons of 8-inch howitzer ammunition; more than 80,000 tons of 4.2-inch mortar ammunition; more than 55,000 tons of 81-millimeter mortar ammunition; more than 15,000 tons of 60-millimeter mortar ammunition; more than 8,000 tons of grenades.

In addition, we have expended more than 1.8 billion rounds of small-arms ammunition.

What do these figures mean? They mean that we have expended in Korea:

Almost as much artillery ammunition as was shot during the whole of World War II in the Mediterranean and Pacific theaters of operation combined.

Almost as much artillery ammunition as was expended in all theaters worldwide of World War II during 1944, the year when our operations were at their peak and expenditures were the heaviest.

The tremendous amounts of ammunition which we actually fired have enabled us to outshoot the enemy through the war in Korea.

The chart on page 33, presented to the Committee by General Collins, shows the number of rounds of mortar and artillery fired by our forces and the enemy during 1952.

This chart does not show any comparison of the relative weights of the rounds fired by Eighth Army and the enemy, but General Collins later said: "... the caliber of our artillery and the caliber of our mortars generally speaking are heavier

than those of the enemy. . . ."

This weight of rounds is important for, as General Van Fleet said:

... it is more difficult to destroy enemy artillery with our counterfire than it used to be in war, because this enemy is dug in. His artillery is in caves and it is scattered and it is more difficult to destroy. . . .

And General Collins:

In open warfare the 105-millimeter is the one that is used. Very frankly, you can waste a lot of 105-millimeter ammunition now shooting at these deep dug bunkers, so what the troops over there now are doing is that they have got tanks that they put in what we call a defilade, just back of the brow of a hill, something of that sort, and that is why I pointed out this morning the expenditure of the 90-millimeter ammunition is really designed to hit tanks, but since tanks aren't prowling around, they are using those for direct fire.

Also they are asking now for more and more heavier calibers of guns.

Some of the Senators asked whether the enemy build-up since June 1951 might have been halted had there been more artillery in Eighth Army. The question was posed by Senator Case and answered by both General Van Fleet and General Collins:

Senator CASE. . . . as I understand, that [enemy] buildup has been accompanied by a digging in, and an entrenchment and development of bunkers and things like that which heavier use of ammunition might have interdicted; is that correct or not?

General VAN FLEET. We would have destroyed more.

Senator CASE. Would have destroyed more of the kind of buildup; with the troops and bringing in the supplies, and digging in, so to speak, so that he is in a relatively stronger position today than he was in August 1951?

General VAN FLEET. That is right.

Senator CASE. And you might have been able to prevent that had you not dictated restrictions on the use of ammunition.

General VAN FLEET. Let me explain the war this way;

The war that does the most damage to the enemy is from the air. It is an almost one-service war that goes on, air war, doing the damage to the enemy deep in his own territory.

The Navy adds their air arm to that.

The Army is merely maintaining their position.

If the Army had been adequately supplied with ammunition, and could put a fire pressure on the enemy greater than



SECRETARY ROBERT B. STEVENS

"I just don't believe some elements of the manufacturing community have realized the seriousness of the situation."



ASSISTANT SECRETARY EARL D. JOHNSON

"It was necessary to compete against generally profitable civilian business without benefit of many of the controls and the driving urgencies of a war-time atmosphere."

it does now, it would consume more of the enemy, the enemy supplies, create problems for him which, in turn, would help our air service.

In other words, the Army is not doing very much today to add to the success of the Air, sir.

Senator CASE. Which, in turn, might mean, to use the words of the other day, might make him more eager to have an armistice?

General VAN FLEET. The only pressure the Army can put on, without advancing, is firepower, and the firepower is not as much as I would like to see it.

Senator CASE. I think that is the question, and the answer I will leave to you.

General COLLINS. Mr. Chairman, may I answer this question?

This is a pretty important question that Senator Case has posed.

Chairman SALTONSTALL. Senator Case, will you please state the question again?

Senator CASE. I think General Collins has it in mind.

Chairman SALTONSTALL. All right.

General COLLINS. The question was, as I understand it—and if I am wrong, I would like to be corrected—whether or not the enemy, over the period of the armistice, of a year and a half, whether or not we could have prevented his build-up and digging in if we had more ammunition.

My answer is "No."

Now, why?

We have been trying to do it with the fighter-bombers and an overwhelming superiority of air, and we haven't achieved it.

Senator CASE. You don't blast them out?

General COLLINS. Senator, let me give you my answer now.

The enemy has to come all the way from the north of the Yalu. They have come down by train and by truck, but they also come marching across country.

If anybody tried to stop that kind of movement by artillery, there would not be enough money in the whole United States Treasury to stop it.

What we have been trying to do, of course, is to attack their railroad lines, and we have bombed them and we could bring you pictures to show where the rail lines have been cut over and over again by effective air bombing.

We have bombed their columns at night, but they are orientals and they are used to carrying stuff on their backs on an A-frame, and they take their time and they go like a procession of ants.

All the bombing that we have been able to do from our sea, from our ships, from our air, has not prevented that. Let me assure you that, in my judgment, the enemy would still have built up the way he has, no matter how much ammunition you would have shot at him.

Furthermore, he would still have dug in the way he did.

I could bring over here photographs that have been taken at the front, that show the beginning of the digging through a hill, of a battery of eight guns of artillery. These people work, and if you start shooting at them, they quit and take cover. Then, when you stop shooting at them—and you cannot shoot 24 hours a day, unless you want to expend the whole United States Treasury—they start digging again.

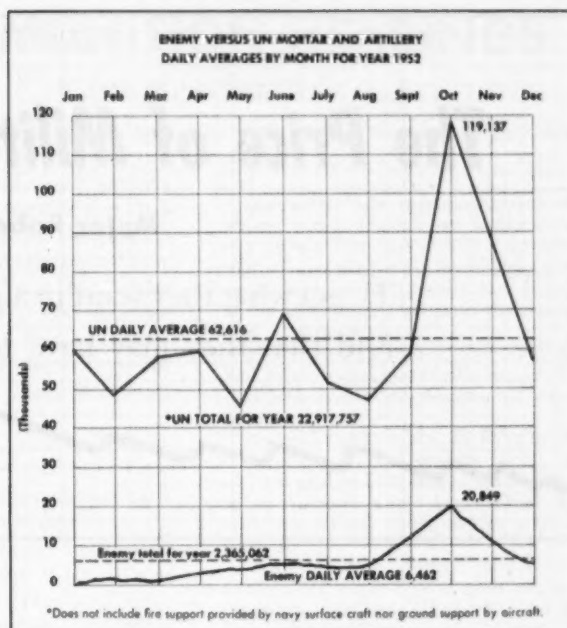
In my judgment, and I will stake my reputation on it as a military man, you could not have prevented the buildup of these forces, or prevented their being dug in unless you would have expended more ammunition than we could possibly produce even in American industry.

That is my judgment.

Infantry Weapons

GENERAL VAN FLEET told the Senators that he had always had plenty of small-arms ammunition but there had been shortages of 81mm mortar shells and hand grenades. Some of the Senators were quite indignant over the latter.

Senator Russell called it "amazing"; Senator Byrd was sarcastic: "it does not take much of a plant to make hand grenades, at \$1.16 apiece"; Senator Symington said that "thousands upon thousands of machine shops in the United States would be delighted to get contracts for hand grenades";



We shoot more ammunition than the enemy

Senator Case was reported to have said it showed "a tragic lack of comprehension."

General Collins and General Van Fleet agreed that the number of hand grenades used in Korea was unprecedented. The ROK divisions use more of them than the U. S. divisions but both use them at a greater rate than in either of the World Wars. One division used 7,000 grenades in one day in repelling an attack, General Collins reported. During the heavy fighting of last October so many grenades were used that reserve stocks grew low. But by the end of the year, General Van Fleet said, the stocks were again satisfactory.

Under Secretary of the Army Earl D. Johnson said there had been difficulties in rapid production of a "satisfactory fuse with precision timing," but that a new "electronic method of measuring the fuse quality . . . will greatly speed up production."

Money and Production

EVERY Pentagon official assured the Senators that the Congress had appropriated every cent for ammunition since 1950 that it had been asked for. This was reassuring for the Senators—especially Senator Byrd, it appeared—had been excited over General Van Fleet's testimony that "some staff officers out of Washington" had told him that part of the ammunition difficulty had been "lack of appropriations."

General Collins, especially, emphasized this point, but it was also brought out that the funds requested for ammunition by the Army were less than the amounts finally requested by the President. Army requests are, of course, subject to revision in the Department of Defense and the Bureau of the Budget.

The amount of money appropriated and available for ammunition for the Army since the beginning of the Korean conflict was established as being \$6.7 billion. Of this the Army has obligated \$5.8 billion.

Deliveries of ammunition up to the time of the hearings

(Continued on page 35)

The Price of Military Characteristics

Major Robert H. Clagett

To get what they want in a piece of gear the combat arms find that they may have to trade away something else

AN ideal military rifle should weigh no more than four pounds (four and one-half with bayonet). It should be capable of accurate fire to a range of 2,000 yards. The ammunition should weigh about one pound per hundred rounds. Sights should be capable of day and night fire (night ranges not required to exceed 300 yards). Both rifle and ammunition should be capable of arctic, tropic, jungle, desert, and temperate operation. (Up to 100 per cent humidity from -80 degrees F. to 150 degrees F.)

These, in parody, are the MCs (Military Characteristics) of modern military equipment. If you have been in the never-never land of research and development chasing such a will-o'-the-wisp as outlined above, you soon learn to evaluate such things and develop a realistic attitude.

Part of this attitude is the realization that development never catches up. The result is that interim MCs are prescribed which are also difficult of achievement, though less rigid.

Secondly, you discover that certain characteristics naturally compete with one another and the achievement of the one defies the other. In other words, you must trade one for the other in order to make any progress at all.

The "prices" involved in this trading

are fixed by the laws of physics, the greatest OPS of them all, and these laws deny all appeals. The "prices" usually follow a simple precept: lightness and simplicity can be bought only at the expense of durability and performance.

TAKE a rifle, for example, since that was our starting point. Say the MCs specify a 20-round magazine in order to get greater sustained fire capabilities. But further they specify that the rifle, accessories and 160 rounds of ammunition shall weigh less than the M1 rifle similarly supported. Accessories such as bayonets, grenade launchers, flash hiders, cleaning devices, etc., all weigh about the same for any rifle; very little weight can be saved on them. Most 20-round magazines weigh from .4 to .5 pounds each. For 160 rounds of ammunition this means a weight increase of 3.6 to 4.0 pounds in the rifleman's combat load of magazines. The clip for an M1 rifle weighs .07 pounds; the twenty clips required for 160 rounds weigh only 1.4 pounds. This means a weight differential in clips and magazines of from 2.2 to 2.6 pounds in favor of the M1. Should we be able to save one pound in the weight of 160 rounds of unclipped ammunition for the new rifle, we are then faced with getting the new rifle lighter by 1.2 to 1.6 pounds before it can even tie the M1 in our second characteristic.

This only means that performance (greater sustained fire capability) is in

direct competition with weight (a lighter combat load).

Do we want the sustained fire characteristic or the lightweight characteristic? We can have either, but not both. The trade is up to us, not to Ordnance.

Another example can be shown in the competition between slower rates of fire for automatic weapons and decreased weight. About the only way to reduce rates of fire in such weapons is to increase the inertia of their moving parts, and that means pounds.

In search of a better pistol for service use, suppose the MCs were established, in general, to provide for a lighter weight than that of the M1911A1 service caliber .45. It would be expected to have the stopping power and lethality of the present weapon.

Looking at stopping power we know that this characteristic is a function of the mass of the bullet times the square of its velocity on striking the target; that is to say, the bullet's terminal energy. Now, Sir Isaac Newton long ago showed us that every action must have an equal, opposite reaction. If the terminal energy is sufficient to stop a man, the weight of the pistol must be sufficient to handle that much energy in the opposite direction. If it is too light you will have excessive recoil.

In the matter of sights for direct fire weapons, the battle of simplicity versus performance reaches a peak. The only simple sights for these weapons are fixed iron sights; however, they are effective

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only at one range and cannot be zeroed or corrected for windage. Add range settings and windage adjustments and you get a combination of threads, ratchets, ramps, and levers. Use telescopes and you get fragility and complicated mounts and adjustments. The sight for any direct-fire weapon must of necessity be a compromise between simplicity and accuracy.

CLEARLY there is keen competition between various MCs in all our equipment development programs. Then why present this article in a service journal that is not representative of one of the technical services? The answer is that we, the using arms, write the MCs and ultimately must accept or reject the equipment presented us by the services. We must learn the art of trading. We must trade the less urgently required characteristics for the ones we need more. If we want lightweight equipment then let us tell the developing and procuring agencies what we are willing to trade to get it.

Naturally when we write MCs, we must do more than describe already achieved equipment and more than demand immediately attainable results. If we did only that there would be no progress. MCs must represent goals for development. Our trading is done more in the fields of relative desirability of different MCs and acceptance of items that fall short of the goals but still represent real progress.

The principles involved in this type of trading are about the same as those for a kid with one penny in a candy store (well, it was a penny in my day—takes at least a dime now). All we have to do is make up our minds. Of course, the kid can sneak out of the decision by saving his penny and maybe later someone will give him a candy store. Like a kid in such a situation, we may have to wait a long time for our heart's desire.

THE AMMUNITION HEARINGS

(Continued from page 33)

were reported to be \$2.8 billion. It was explained that some of the contracts call for deliveries into 1956. Colonel Medaris of the Ordnance Corps testified that Ordnance believes contracts for the production of ammunition "should extend over a twelve-month period" and that "under present conditions it seems most desirable and our contractors feel that it is essential, that they be given orders that will assure them continued production for an optimum period of time."

He said that it can take as long as eighteen months from the time Ordnance receives a new appropriation until the first production is delivered.

All the Pentagon officials agreed that there had been mistakes made in the ammunition program. The basic difficulty had been in getting production rolling at a time when civilian goods were being manufactured and consumed at high levels. The machine tool shortage had probably been most damaging to the rapid production of ammunition. The 1952 steel strike had had some effect on production, how much was controversial. Ordnance had made steel shell casings in World War II but not enough to get out all of the bugs in the process and it wasn't until after the Korean demands became heavy that Ordnance learned that the steel required an additional heat-treating process.

Secretary Stevens said "I just don't believe that some elements of the manufacturing community have realized the seriousness of the situation." If they did, and he saw it as one of his jobs to make them realize it, "we can accomplish a whole lot more along this line."

Senator Symington seemed to agree with the new Secretary of the Army. Indeed he summed up the hearings

more cogently and realistically than anyone:

It is a fact that, regardless of personalities, which I think we better leave out—it is a fact that in 1951 we were told we could have all the defense necessary, and our high standards of living, at the same time. That is on the record, and it is specific.

We were also told at that time we had enough machine tools, incidentally, which a year later became our worst bottleneck.

It doesn't seem to me we have to defend people. Those are the facts.

I am glad to hear what [Under] Secretary Johnson said. He believes we will have to cut down on the civilian economy.

With all due respect to General Collins, for whom I have great respect, questions have been asked him, and he has answered them.

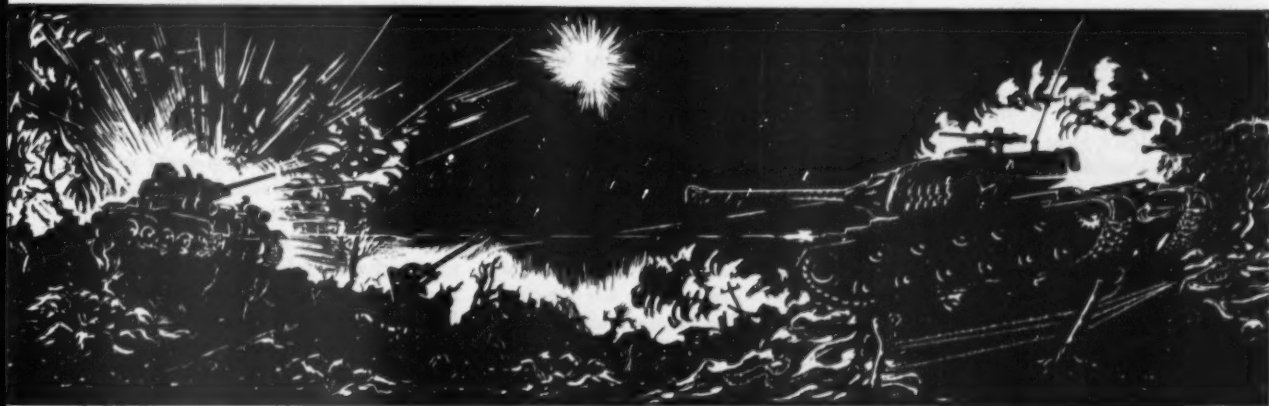
Questions have been asked General Van Fleet, and he has answered them.

My impression is the ammunition is now in good shape. My impression is based on everybody's testimony that the ammunition situation was not in good shape at one point. As General Van Fleet says, it was not in good shape.

We cut the Army to pieces; we cut the Navy to pieces; and cut the Air Force to pieces.

It doesn't seem to me we have to blame anybody. Those are the facts. That was done, regardless of who was responsible for it; and now we are doing our best to build back the strength of the United States.

The Committee didn't blame anyone. But it said General Van Fleet had been "fully substantiated." And it appointed a sub-committee, headed by Senator Margaret Chase Smith, to probe the condition of U. S. ammunition "worldwide" and to "determine officials and conditions responsible" for the shortage in Korea. That sub-committee had not reported when we went to press.



FRONT AND CENTER

The planned public demonstrations of the NIKE guided missile have been cancelled in the interests, the press reports, of safeguarding national security. This is all to the good, for new weapons are surely something we should not be too blabber-mouthed about. But it seems odd that the demonstration was cancelled after many persons in official Washington had been oriented on what NIKE could do and shown pictures of it in flight. Indeed *Time* magazine obtained and published a picture of NIKE in the issue that was on the newsstands when the announcement was made of the cancellation of the demonstration.

At least 60 per cent of the men evacuated from the front lines for psychiatric reasons are treated at battalion aid stations and returned to full duty. And 50 per cent of those evacuated as far as the division clearing station are returned to their units after treatment. But these figures can be reduced, the Surgeon General believes, by teaching company grade officers and noncoms how to detect battle exhaustion cases, and apply simple methods of treatment. The SGO is going to publish a full explanation of the Army's neuropsychiatric treatment techniques for distribution among the combat arms. Will the time come when the infantry officer or noncom is as proud of his certificate of proficiency as a neuropsychiatric aid man as he is of his Combat Infantryman Badge?

The current trend in industry of sliding wage scales adjusted to cost-of-living indexes is much closer to the ancient adage that "a laborer is worthy of his hire" than the recent decision of the Secretary of Defense to oppose any pay raise for the services because of his laudable desire to reduce military spending. Certainly the military pay roll is a tremendous part of military spending, but the Secretary seems to have overlooked other factors. A worthy laborer certainly shouldn't have his "hire" determined by his employer's desire to save money, especially when the laborer is prohibited by law from leaving his employer. And certainly some of the Secretary's other problems, service morale, especially, can only be solved if a fair and honest pay scale is adopted. The Strauss Commission's recommendation that military pay be adjusted to the cost-of-living index certainly merits ex-

amination. If a fair and realistic sliding scale could be established it would be a great boon to services families, that have too often been penalized by political situations over which they had no control and which had nothing at all to do with the question of whether a raise in pay was or was not merited.

A study of all of the services' tables of organization and equipment and similar manning schedules has been begun by Secretary of Defense Wilson in conformance to a directive of the Congress placed in last year's appropriation act. In ordering the study Mr. Wilson said that the examination should be made to establish service practices that conform to the "current situation" and the possibility that "this period of tension may continue for an indefinite period."

A high-level examination of why career soldiers, sailors and airmen of all ranks are leaving the services is under way. General Bradley recommended the survey which is being conducted by Rear Adm. J. P. Womble, Director of Personnel Policy in the office of the Assistant Secretary of Defense for Manpower. The other members of the committee are Maj. Gen. Robert N. Young, the Army's G1, Rear Adm. J. F. Bolder, Dep. Chief of Naval Personnel; Maj. Gen. Morris J. Lee, Personnel Planning Director of the Air Force, and Brig. Gen. Nels H. Nelson, G1 of the Marine Corps. This committee will delve into all of the old and familiar complaints: low pay, poor housing, inability of families to accompany servicemen on foreign tours and the frequency of foreign tours, decreased medical and dental care of dependents, the reduction of post exchange and commissary services, uncertain promotion policies, and the lowering of disability, retirement and other benefits. Indeed the insistent whittling away at the tangible and intangible rewards of a service career has gone so far as to threaten the "progressive downgrading of the caliber of the Armed Forces"—to use the words of General Bradley.

The Army has reclassified its aircraft to conform to the uses it has for them: **Fixed-wing.** 2-place observation for use by artillery in fire adjustment and for training and courier missions; 5-place utility type for general purpose trans-

portation over short distances; 5-place, twin-engine type for long-range all-weather transportation of commanders and staffs of large headquarters. **Rotary-wing.** 2-place small reconnaissance helicopter for front-line duty; 5- or 6-place utility helicopter for evacuation and transportation; 1½- 3- and 5-ton helicopters for cargo carrying.

The investigation of methods of improving the organization of the Department of Defense, by the Nelson A. Rockefeller committee, is expected to report to Mr. Wilson by the end of April but some of the critics of some of the members of the committee were shell- ing it before it even began to hold its hearings. Foremost of the critics are two Congressmen: Representatives Paul Shafer and James Van Zandt. They say the committee is part of an effort to "Prussianize" the Defense Department by establishing an "all powerful" general staff. Targets of their attack are General Bradley, former Secretary Robert Lovett, and Dr. Vannevar Bush, all of whom believe, they presume, that the Department of Defense must be strengthened by giving the Secretary of Defense a military staff and the Chairman of the JCS greater military authority. To what degree the Rockefeller committee will so recommend, if at all, couldn't possibly be known before the committee reports. So the gunfire is probably ranging rounds aimed at destroying any recommendations it may finally make.

The Marine Corps is experimenting with quadrangular infantry units but won't announce any results until the study is completed late this year. The tests include adding a battalion to the infantry regiment and adding a rifle company to the battalion. The 3d Marine Division is conducting part of the tests, and its commander, Maj. Gen. Robert H. Pepper, is reported to have said that "the Marine Corps hopes to get more fire power with less money," without increasing the regiment's or division's supply and administrative strength. Not much criticism of the triangular concept is heard in the Army, but certain airborne soldiers have long contended that the airborne division, at least, should have four regiments. Maj. Gen. James Gavin was a foremost exponent of this at the Infantry Conference in 1944.

BATTLE DRILL

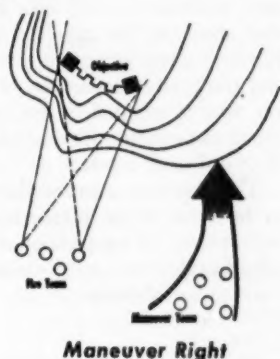
THE first part of this article, published last month, stressed the fact that Battle Drill is training that makes a unit, squad or platoon, work as a team, each member confident that members understand and will react to the signals or orders of their leader. Such confidence begets aggressive-

ness and initiative and brings victory on the battlefield.

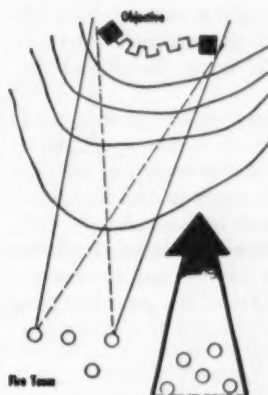
The number of maneuvers or "plays" performed by a small unit on the battlefield are limited and follow a pattern. This makes it possible to develop a number of fixed maneuvers that meet almost any combat situation.

Basic Squad Maneuvers

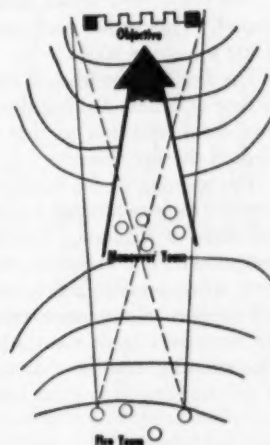
The basic maneuvers of a squad are: Frontal Attack, Frontal Attack (with overhead support), Maneuver Right, and Maneuver Left. All but Maneuver Left (which is essentially the same as Maneuver Right) are illustrated at the right.



Maneuver Right



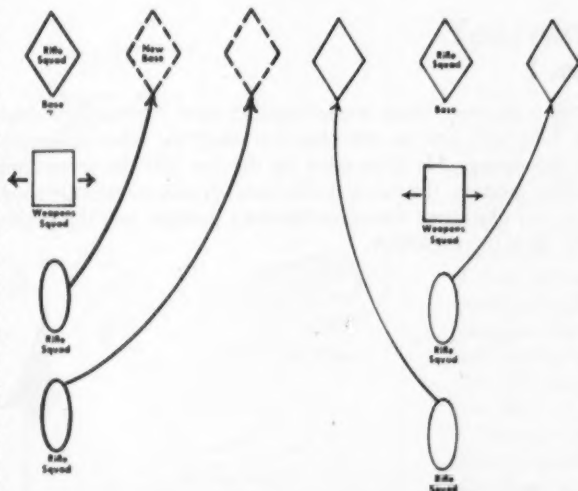
Frontal Attack



Frontal Attack
(overhead support)

Platoon Maneuvers

The basic or fixed maneuvers of the platoon are Forward Attack, Maneuver Right, and Maneuver Left. All but Maneuver Left are illustrated below.

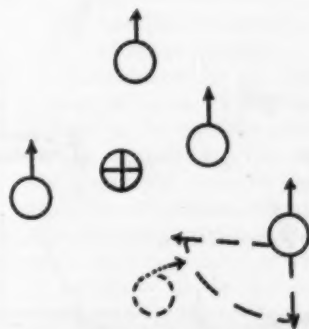


Platoon—Maneuver Right

Platoon—Forward or
Attack Forward

Basic Patrol Maneuvers

Patrols vary in size but their maneuvers follow the pattern of squad and platoon maneuvers. There is a base of fire element and a maneuver element, just as in all squad and platoon maneuvers.



Five-man frontal attack

Training and Exercises

Battle Drill itself supplements basic squad, platoon and patrol training. The training method is familiar and consists of these three phases: explanation, demonstration and application.

Squad Training

The squad is, of course, divided into fire and maneuver teams, which are interchangeable.

The squad first walks through the maneuver over open ground. This shows each man what he and each member of his squad are to do.

The fire support team is then taught to select ground for its base of action. During this phase the maneuver team follows the instruction so that it will better understand the work of the fire team.

The training of the maneuver team should be on ground suitable for teaching the elements of terrain appreciation and how to advance. The base of fire team follows this instruction. The maneuver team is taught to advance under cover when possible and to coordinate its final advance with full support of the fire team. When cover is not available the maneuver team must advance by fire and movement. This training must be thorough. One of the great mistakes in this training is to stress speed at the cost of a slower but

The exercises described here are for the squad. But they are equally useful for rifle platoons and patrols of any size, if instructors are imaginative and thoroughly understand the requirements of battle drill and methods of teaching.

surer pace. Battlefield casualties result when men plunge forward headlong when they could move slower and more safely. Individual speed is relatively important; the will to move and close with the enemy is all-important. A slow but steady forward movement should be stressed.

To achieve success the final assault phase must be practiced endlessly so that team leaders will gain confidence in their men and the members will be confident that they are correctly interpreting the intention of their leader. Smooth and instinctive cooperation of the fire team and the maneuver team is essential in this final phase. A properly trained squad can execute the final phase of an attack without benefit of orders or signals.

The first movement of the fire team leader is recognized as the signal of the ground from which the base of fire team will operate. A similar signal by the maneuver team leader tells the maneuver team the direction of movement and the route to be followed.

Exercises

Practical exercises for teaching Battle Drill are limited only by the imagination of instructors. But in every exercise correct methods, including timing, cooperation between members, correct use of the ground, and development of

initiative, must be stressed, along with the development of an instinctive understanding by each man of what his fellow team members are going to do next. Only repeated drill can develop these qualities.

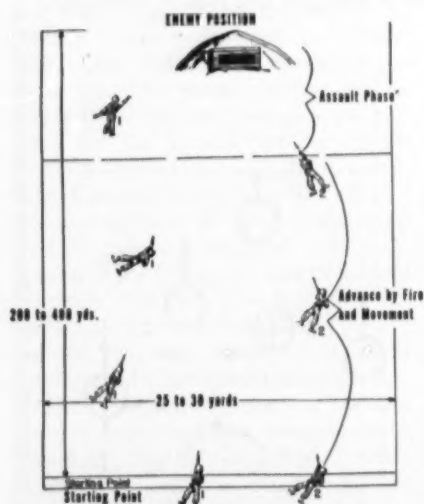


Figure 1. How the two-man team maneuvers

Exercise No. 1

In this exercise a two-man team works together over a prescribed course (see Figure 1). One man fires on the objective while the other rushes to a position nearer the enemy. He then takes up the fire and the second man advances to another position. In this way the men advance to grenade throwing distance from the objective. One man throws a grenade into the position and both rush it after the explosion.

Exercise No. 2

In this exercise three riflemen act as a team in the same way as the two-man team, described above.

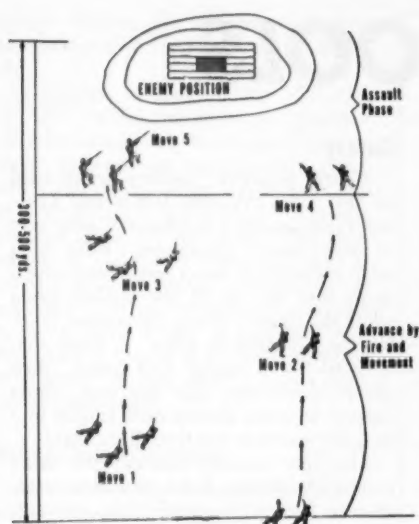


Figure 2. How the five-man team maneuvers

Exercise No. 3

This exercise has a three-man maneuver team and a two-man automatic rifle team. Using fire and movement, the teams leapfrog to a point near the objective. (See Figure 2) The fire team then covers the position with fire while the rifle team assaults the position.

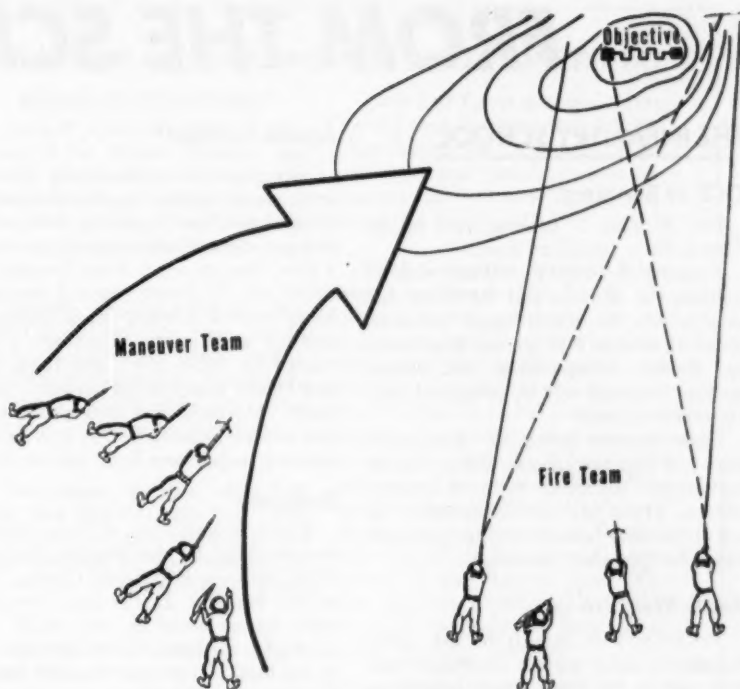
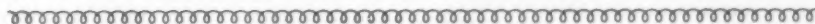


Figure 3. How the nine-man squad maneuvers

Exercise No. 4

This exercise consists of a number of squad problems that give application to squad plays, such as Attack Forward, Maneuver Right, and Maneuver Left. Figure 3 shows the final phase of the movement on an objective. The fire team is covering the objective and its rear with fire while the maneuver team prepares to assault it.



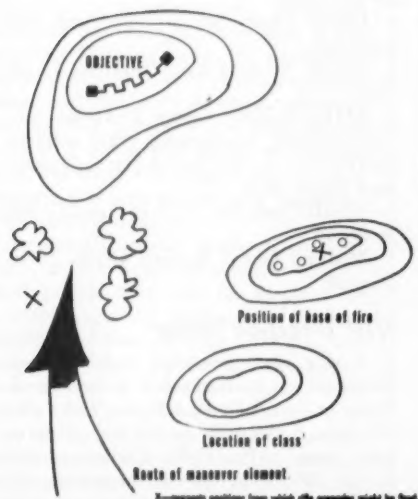
Terrain Appreciation

Any man can tell which side of a hill will give him the best cover; can see how a ditch gives him safety; how a shadow will hide his movement; how a bluff will stop his advance; how open ground is extremely dangerous. Terrain appreciation is all of these uncomplicated things but its principles must be taught through application and reiteration until every man understands and instinctively gets the best use from the ground over which he moves and fights.

Terrain appreciation can be taught through simple and practical methods. But to give each element its proper emphasis the instructor should constantly reiterate these five elements in terrain appreciation:

- (1) Routes of approach
- (2) Weak spots in enemy positions
- (3) Suitable positions for base of fire
- (4) Avenues for maneuver
- (5) Alternate positions

The sketch at the left shows how a piece of ground can be used to illustrate to the class the elements of terrain appreciation. On arrival at the ground the instructor should develop the information through questions that lead individual members to select the various positions and routes of movement of the fire team and maneuver element. Other points that can be covered are possible alternate positions, and deceptive measures that might be used.



Terrain appreciation

FROM THE SCHOOLS

THE INFANTRY SCHOOL

OCS at Benning

Fort Benning is training most of the Army's officer candidates now.

Training for infantry officers will be continued at Benning and the officer candidates from the armor, signal, ordnance, chemical, medical field service, quartermaster, finance, transportation, and provost marshal branches will be integrated with the infantry classes.

Under the new policy, all officer candidates will take the Infantry Officer Candidate course qualifying them as infantry officers. Those who are commissioned in one of the other branches will go to branch school for specialized training.

Arctic Warfare

To keep TIS abreast of the latest thought on arctic warfare six officers have been sent to the Army Arctic Indoctrination Field Exercise, 1953, at Big Delta, Alaska.

There they will study tactical operations in the Arctic, as well as problems of arctic survival. The latter will include such things as shelter, clothing and the use of equipment at extremely low temperatures.

14,650 Jump in 1952

Altogether 1840 officers and 12,810 enlisted men who completed the airborne course in 1952 made 74,705 parachute jumps without accident or injury.

In addition to U. S. soldiers there were representatives from other countries as well as from the Air Force and Marine Corps.

Three general officers, including Maj. Gen. Guy S. Meloy, Jr., Commandant of The Infantry Center, were among the graduates.

Additional Fire Power

The Department of the Army recently authorized one additional Browning Automatic Rifle, Cal. 30 M1918A2 for each nine-man infantry rifle squad in all infantry and airborne infantry regiments in the Zone of Interior. The issue is contingent upon availability.

The T/O&E change has also authorized promotion of one of the three Pfc's in the squad to corporal. The numbers five and six men in the squad will be BAR gunners.

ROTC Summer Camp

Plans are now being made for the 1953 Infantry ROTC Summer Camp scheduled for 20 June to 31 July at Fort Benning. Approximately 2,700 cadets from 60 or more colleges and universities in the Second, Third, Fourth, and part of the Fifth army areas are expected.

Squad Leaders

TIS is currently developing an eight-week squad leaders' course designed for selected graduates of training division leadership classes. Preliminary plans call for a new class to begin every month. The course will be directed toward developing better trained infantry squad leaders for overseas replacement. Students will be trained for MOS 1745 and 1812, Light and Heavy Weapons Infantrymen, respectively. On successful completion, graduates will be awarded MOSs with prefix R denoting supervisory level qualifications.

Economy

A way to economize on litters has been recommended by the Medical Company, 508th Airborne Regimental Combat Team at Fort Benning. In the past, litters were made useless when the tap, which holds the legs to the litter, fell off after hard use in the field. To prevent this, the Medical Company bored holes through the bolts that secure the legs to the litters and inserted a cotter pin through each bolt.

Night Training

A preliminary investigation was conducted at Fort Benning last month by the Human Resources Research Office into the techniques used in the training and teaching of the individual soldier in night vision and night training.

Dr. Frances E. Jones, of Training and Research Division of HUMRRO, plans a research project that may ultimately result in better night vision and shooting for the infantry soldier.

REUNIONS

24th Infantry Division. St. Louis. 14-16 August. For details write: J. Peyton, 131 N. Culver St., Baltimore.

Eighth Armored Division. Bellevue-Stratford Hotel, Philadelphia. 3-5 July. For details write: Henry B. Rothenberg, Room 1008, 33 N. LaSalle St., Chicago 2.

75th Infantry Division. Washington, D. C. 14-16 August. For details write: John D. McBurney, 5822 E. 14th St., Kansas City, Mo.

94th Infantry Division. Hotel New Yorker, New York City. 23-26 July. For details write: Bernard Frank, Reunion Chairman, Commonwealth Building, Allentown, Pa.

83rd Infantry Division. Hotel Hollenden, Cleveland. 20-22 August. For details write: Headquarters, 83d Inf. Div. Assoc., 1435 Clark Street, Pittsburgh 21.

Safety

A new parachute packing device used by the 508th Airborne Regimental Combat Team assures a quicker and safer way to pack reserve parachutes. Built from scrap materials, it has a metal tong which drops over the top of the packed nylon while the chute is being compressed, holding the parachute in place. A short arm, operated by a spring foot pedal, then clamps down one side flap and allows packers to insert the rip cord handle into its cones and close the three flaps faster.

The new machine increases the maximum daily output of the parachute maintenance section by nearly fifty percent. The portable device can be operated by three men and lessens chances of a malfunction by limiting physical handling, and avoiding manhandling twisted nylon.

THE ARTILLERY SCHOOL

TAS Teaches AN/GRC-26

The Communications Department has received five AN/GRC-26 radios for instructional purposes. This set, which will replace the SCR-399, offers the near ultimate in long-distance military communication and is ordinarily used for communications between command posts. It has a rated range of 250 miles for CW or teletype and 100 miles for voice operation. The power output is approximately 400 watts on teletype or CW and 300 watts on voice operation.

Summer Camp

More than 4,000 reservists, National Guardsmen, and ROTC cadets are expected to attend the five summer camps slated for Fort Sill this summer.

The tentative schedule and composition of the camps:

USAR Camp No. 2, 7-20 June—400 reservists.

USAR Schools Encampment, 12-26 July.

ROTC Summer Camp, 20-31 July—2,700 students representing every artillery ROTC unit in the United States, Hawaii, and Puerto Rico.

USAR Camp No. 10, 2-16 August—500 reservists.

National Guard Summer Camp, 16-29 August.

VHF Direction Finder

A very high frequency radio-direction finder set has been installed in the control tower at Fort Sill's Post Field. This radio direction finder will enable lost pilots to get a "steer" to Post Field. The set operates in the 100-156 megacycle range and presents electronically a visual indication of the direction from which an aircraft is

calling. Within five seconds the tower operator can give the pilot a course to the field.

In addition to those of the SCR-399, the AN/GRC-26 has radio teletypewriter and relay capabilities. It consists of two receivers, radioteletype components, a transmitter, and teletypewriter equipment. The set is housed in a special shelter normally mounted on a 2½-ton truck. The components of the set are mounted either in compact, shock-mounted cabinets or in cases, and fit in the limited space available in the shelter. Power is supplied by a power unit mounted in a 1-ton, two-wheel cargo trailer which is towed by the vehicle carrying the shelter.

Study Red Weapons

A 120mm mortar and an 1895-6 model pack howitzer are being added to the foreign matériel available for study by students at TAS. These are part of a shipment of captured matériel sent here from Aberdeen Proving Ground. This shipment also includes other infantry and artillery weapons used by the Communist armies.

Atomic Warfare Instruction

TAS instruction in Atomic Warfare is keeping pace with the vast and rapid increases in knowledge on this new frontier. All classes receive a certain amount of this training. Appropriately, emphasis in the basic courses is placed upon individual and unit defense against atomic attack, and capabilities and effects of atomic weapons. In addition to these basic orientation subjects, the Regular Advanced Class receives instruction in tactical employment of the 280mm (atomic) gun, atomic fire planning, atomic intelligence and atomic target acquisition, and the effect of both friendly and enemy atomic capabilities on artillery tactics at battalion, division, and corps levels.

Although the newness of atomic warfare necessitates additional instruction for basic orientation, much of this requirement is absorbed by the integration of the atomic possibility into all instruction—just as the possibility of an air strike, for example, is always considered. It is emphasized that atomic warfare is not a mysterious, obscure, and dreadful possibility too difficult and technical for the field soldier to comprehend, but merely an integral part of every commander's estimate of the situation, SOP, and planning.

Accordingly, atomic "problems," in most cases, are not new and separate instructional periods, but only the insertion of an atomic capability into existing, standard problems and field exercises. This is in line with the TAS viewpoint that the atomic bomb is not an "absolute weapon" that throws all existing doctrine out the window, but simply another means of fire support that must be combined with maneuver and integrated with conventional principles, tactics, and weapons, to attain the traditional military objectives.

INFANTRY SCHOOL INSTRUCTIONAL MATERIAL

WEAPONS DEPARTMENT

Target Grid Method of Fire Control for 81mm Mortar: No. 1605. Organization and operation of the Fire Direction Center, use of the M10 Plotting Board for controlling 81mm mortar fires. 7 hours. 10¢

Rocket Launcher 3.5": No. 1221. Characteristics, demonstration firing; preparatory marksmanship; methods of instruction; boresighting launchers; practice tracking moving targets. Familiarization firing. 4 hours. 10¢

Technique of Fire, MG Cal. .30, and MG Cal. .50: No. 1370. Characteristics of fire; classes of fire; fire distribution; fire control; fire commands; overhead fire. 8 hours. 10¢

Mechanical Training, 57mm and 75mm Rifles: No. 1706. General data, nomenclature, disassembly and assembly; functioning; stoppages; immediate action. 6 hours. 10¢

TACTICAL DEPARTMENT

Rifle Company in Attack of River Line: No. 2156. Principles governing river crossing operations with emphasis on reconnaissance, selection of crossing sites and objectives, formations, organization of waves, security measures, use of supporting weapons, timing and execution. 4 hours. 50¢

Rifle Company in Attack: No. 2158. Principles of attack to include tactical employment of a rifle company; planning required by a rifle company commander for a daylight attack to include necessary coordination, plan of maneuver, and fire support plan followed by student participation in a practical exercise. 8 hours. 35¢

Flank Battalion in Attack: No. 2232. Principles applicable to flank units in offensive combat; a practical exercise illustrating the actions of a flank battalion in an attack of a hastily organized position. Flank security, including security against guerrilla and infiltration tactics, and formations peculiar to this type operation are emphasized. 6 hours. 30¢

Perimeter Defense: No. 2476-A. Tactical employment of the battalion with attached and supporting units in the organization of a perimeter defense. 1 hour. 10¢

Combat Formations, Rifle Squad and Platoon: No. 2002A. Organization and equipment of the rifle squad and platoon; combat formations and their tactical uses; combat drill. 1 hour. 10¢

Tank Company, Infantry Regiment in Attack: No. 2167. Organization and equipment of the regimental tank company, its mission, capabilities and limitations, and the tactical principles which govern its employment in the attack. The primary duties of the tank company commander, both as a commander and as a regimental staff officer. The general responsibilities of rifle unit leaders in connection with the employment of regimental tank company. A map exercise illustrating the employment of tank company with the regiment in a daylight attack. 2 hours. 50¢

Battlefield Illumination: No. 2253N. Principles and techniques governing the application of the means available for battlefield illumination, their capabilities and characteristics, the preparation and planning required for successful execution of an illumination plan. 2 hours. 20¢

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STAFF DEPARTMENT

Air Transported Operations: No. 6974. Staff planning aspects of an early link-up type airborne operation, based on the airborne regimental combat team, to include the personnel, intelligence, operations, logistical and pathfinder aspects of staff planning. 4 hours. 30¢

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Irons in the Fire



Wood Truck Bodies

The Timber Engineering Company recently announced three new-type all-wood bodies for military trucks which will answer most of the shortcomings found in the million wooden truck bodies used during World War II. The new wood bodies are both stronger and lighter. The wood parts are impregnated with pentachlorophenol, eliminating problems resulting from fungus and decay. The adhesive used in bonding the wood is completely waterproof so as to prevent delamination regardless of weather conditions or immersion. The basic design is a continuous, U-shaped laminated frame combining the functions of bolsters and side-support members, eliminating the need for any mechanical joint between bottom and sides. A dimensional stabilizing chemical treatment minimizes shrinkage and swelling of wood.

Joint Arctic Tests

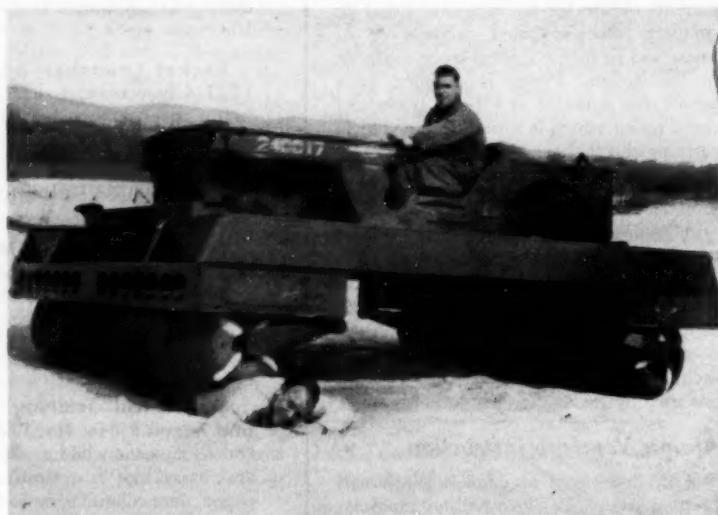
Communications and radar equipment is getting a rugged workout in the Arctic by teams of Canadian and U. S. Air Force experts. Purposes of the tests are to determine if especially designed equipment can stand the extreme Arctic temperatures and if certain electronic equipment designed and made in one country can be combined and operated with equipment made in another.

Turbo-Prop Freighter

Lockheed Aircraft Corp. has just released the details on a new turbo-prop air transport that will, it says, fly higher and faster than any of the current transports. Designated the C-130, it will be a four-engine plane, powered by Allison turbo-prop engines. A squat, low-slung plane with high wings, it will be big enough to carry a 155mm howitzer and a high speed tractor.



Sand and Swamp Tires



Watermelon-shaped tires with low air pressure (one and one-half to five pounds per square inch) have excellent maneuverability over swampy land and sandy beaches. Called the "Roligons" by the inventor, William H. Albee—the gentleman enjoying the pressure in the photograph—the new type tires are molded by the Goodyear Tire & Rubber Co., using one ply of rubberized fabric, topped by a quarter-inch layer of gum rubber tread stock.

Poncho Patch Kit

The Hughes Company of New York has developed a first-aid repair kit primarily for sportsmen and campers which may also be useful to soldiers. The kit contains 250 square inches of assorted patching materials, buffer and strong top-grade cement with brush applicator. The company claims it's just the thing to patch clothing, canvas, tents, ponchos, rubber, wood, plastics and leather.

Microwave Classes

General Electric has been conducting a series of month-long classes for Signal Corps technicians in the installation, operation and maintenance of microwave relay communications equipment. Microwave, which uses radar-like signals capable of carrying up to twenty-four conversations simultaneously, has wide military uses.

★ BOOK REVIEWS ★

'THE DAMNEDEST BOOK'

THE ARMOR OF ORGANIZATION. By Alvin Brown. Hibbert Printing Company. 610 Pages; Index; \$5.50.

The sub-title of this extraordinary book is "A Rational Plan of Organization for the Armed Forces, And, as a Preliminary Thereto, An Inquiry Into the Origins of Existing Military Organization." No subject could be more timely. Former Defense Secretary Robert A. Lovett, just before he turned over his job to Mr. Wilson, charged that the Department of Defense needs reorganizing and criticized the current Joint Chiefs' setup. Dr. Vannevar Bush, a respected commentator on military matters, he said at several places and times that he is convinced that the organization under which our military planning is done is faulty. And, as Mr. Brown points out in his book, we have invariably reorganized our military high command immediately after entering a war. (We have, strangely, also changed it again as soon as the war was over.) Obviously, the need for correct organization which will not have to be changed as soon as we are under the stresses of all-out war is vital.

Mr. Brown, "a financial executive in industry" according to the dust jacket of his book, is a student of organization who has written two previous books in that field. He says of himself: "It is unfortunate that those who live close to a problem often lose the ability to see its chief elements. My contact with military affairs, though perhaps somewhat greater than that of the average man, has not, I hope, exposed me to this handicap."

His book is divided into three parts: the first, a historical account of the development of military organization; the second, an analysis of present American organization and something of the history of its development; and finally the author's views as to an effective organization for the upper echelons of our armed forces.

The book is extraordinary on several counts. Its bulk alone is something to wonder at when considered as the presumably spare-time output of one individual, and one who is not a specialist in military affairs at that. Its scope, as has been indicated, is considerable and there is impressive evidence of wide research. This reviewer does not know the circumstances of the book's publication (not apparently by an established publishing house but by a printing company). This is itself an extraordinary circumstance. It is a first-class example of the bookmaker's art, incidentally.

It is difficult to summarize within reasonable limits Mr. Brown's ideas. Although he says that "generally, the military thought on organization is fundamentally sound," there is little of current military organization, even officers and enlisted men as two

separate categories, which remains in the author's "rational organization" of the country's defense setup. He claims much "mis-organization" has existed and does exist, and that there are many errors of expression, of definition, and of precision in the "military formulation of organizational principle." He comments on the high command of World War II: "It is a trifle droll that, of the joint chiefs of staff, so-called—the committee that managed military operations—only one of the four was truly a staff officer, and that he had no staff of which to be chief. That one, of course, was the Chief of Staff to the President. The Chief of Staff of the Army was, in fact, . . . commander of the army. The other two committeemen were unequivocally titled Commander in Chief of the United States Fleet and Commanding General of the Army Air Forces."

Mr. Brown does not think that "any of the chiefs of services who want to gain or preserve autonomy are concerned about their relative rank or power." They have only a limited period of remaining active service, and are beyond the influences of personal ambition. Their "earnestness gives its own guarantee of integrity." Elsewhere, he says that "the fear that a man's original specialty will cling to him when he enters upon broader duties, and that his administration will be distorted by that bias is no more than a fear of inability to select the right man."

In the author's opinion the two fundamental errors in the military practice of organization are failure to delegate responsibility, and neglect to differentiate functions. Then by way of sixteen truths "that emerge from a study of the history of military organization" Mr. Brown comes up with a radical plan for reorganizing the armed forces. The President continues as Commander in Chief of the Armed Forces. The Secretary of Defense would be Deputy to the President and act in his stead to the extent the President desires. The Deputy Secretary of Defense, a "permanent member of the forces" but "not a military executive," would assist the Secretary and act in his stead in his absence. Then come nine "branches" each under a chief who, like the chiefs of sub-branches, will have a deputy chief "wherever a responsibility requires." These "branches" would be: Program, Personnel, Development, Procurement (and construction), Transportation (and communication), Training, Combat, Inspection, and Service. The Army, Navy and Air Force are out of the picture as separate entities.

"Men," says Mr. Brown, "do not easily question the truth of notions they have accepted all their lives." Nor will military men easily accept such a drastic upheaval of organization and method as he suggests, particularly when he is often misinformed

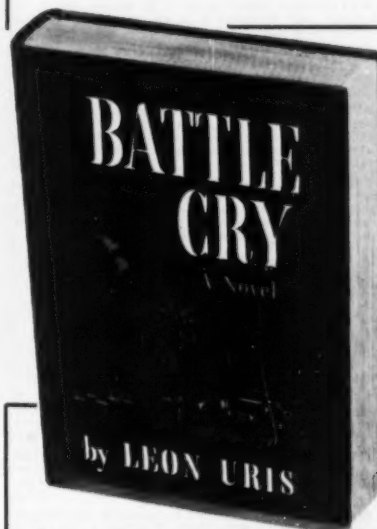
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. . . Sure it's got gore

. . . but what it's

got most of is

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and makes statements which do not jibe with the reader's experience: "a staff is a committee," for example, and "the late war was conducted with complete disregard of the principle of unity of command."

What, then, is the value of the book for the military man? The answer is that here is a fresh viewpoint, an honest searching into many matters that we take for granted, and an irritant which should discourage acceptance of *status quo* just because "that's the way we've always done it."

On the other hand, it must be admitted that this is a hard book to read because the author goes up many side alleys and gets involved in too much minutiae not of organization but of theory, philosophy, and semantics. It is reasonable to prophesy that some military men will sum up the book in a phrase: "That's the damndest book I've ever read!"—MAJOR GENERAL H. W. BLAKELEY

THE WOUNDED AND THEIR MEDICS

BACK DOWN THE RIDGE. By W. L. White. Harcourt, Brace & Company. 182 Pages; \$3.00.

Back Down the Ridge is about what you'd expect it to be from the title—the story of the men who get carried back down the ridge and what happens to them from there. It is their story in spite of the fact, White says, that he did not originally intend it to be theirs.

As a matter of fact, the book is packed full of excellent material on the Army medical setup in Korea with special attention to the Mash, or Mobile Army Surgical Hospital. This is the surgical unit which backstops each division engaged with the enemy, sorts out the wounded into groups which can be passed safely back down the evacuation chain and those who have to have immediate surgery if they are to live at all, and performs the necessary surgery. It can also pack up and run in either direction on about four hours' notice, and has apparently replaced the more cumbersome Evac Hospitals you may remember from World War II.

The author covers very well indeed the entire medical setup, from the aid man with the company to Walter Reed Army Medical Center. The Medical Corps may be proud of the results of Mr. White's reporting and the fighting man and his family encouraged by it.

But in telling the story of what happens to the wounded, the chief characters must necessarily be the wounded themselves. This is their book, too, and it is one more proof that the fighting man in Korea today is as good a soldier as we have ever put in the field.

We dislike quibbling as much as the next man, but we would like to remind Mr. White that "wounded" and "hit" are perfectly good English words and as such are preferable to "clobbered" and "clomped" which all of his wounded seemed to get. Otherwise, we salute him. —O.C.S.

SOUTH AFRICANS IN THE DESERT

CRISIS IN THE DESERT. May-July 1942. By J. A. I. Agar-Hamilton and L. C. F. Turner. Oxford University Press, 1952. 386 Pages; Illustrated; Maps; Index; \$9.00.

This first volume in the official history of South African forces concerns the actions of the 1st and 2d Divisions and supporting units in the most critical portion of the fighting in the Western Desert. The period is the six weeks beginning 26 May 1942, and the area a strip never more than fifty miles from the Mediterranean—an area described by one German general as "the tactician's paradise and quartermaster's nightmare." The story begins with Rommel's onslaught on the northern Gazala line where the 1st Division was involved, through the 2d Division's heroic defense of Tobruk to its eventual capitulation. The 1st Division got through to fight again at El Alamein where Rommel was stopped in his attempt on Cairo.

Few war histories are as ably prepared as this one. These professional military historians evidently were allowed free rein. Documenting their account on a wealth of friendly and enemy official and personal accounts, they turn out a full, rich narrative spotted with skillful use of humor and criticism. There are fifteen superb fold-out color maps to amplify the twenty-two sketches. Being a record of the turning point of the North Africa campaign, it well serves as background material for the study of the November invasion.—N.J.A.

BONAPARTE AT ELBA

WHY WATERLOO? By A. P. Herbert. Doubleday and Co., 1953. 352 Pages; \$4.00.

Why Waterloo? This looks like a question with an easy answer. What else could it be but the irresistible urge of the emperor of the French who became the king of the few square miles of Elba, to regain freedom and power? But according to Mr. A. P. Herbert, the versatile British author, that answer is too simple. Look deeper; examine the record without prejudice; above all, *cherchez la femme*, and the answer is more subtle and possibly psychologically much sounder.

At all events, Mr. Herbert's documentary proof is pretty convincing. On the island of Elba, Napoleon became the frustrated husband and father, with a dominating longing for his wife, Marie-Louise, and his son, the King of Rome. As long as he could anticipate a reunion with his wife and son, he seemed to readjust surprisingly well to exile to his little kingdom. He organized a government and public works with all the air of a ruler with a long-range program. Discontent with his downfall was not apparent until his repeated efforts to have his family with him were thwarted. His father-in-law, the Austrian emperor, the other members of the coalition, and the weakness or indifference of Marie-Louise herself kept the family apart.

Marie-Louise, however, was not the only woman who has to be looked for in this

period of Napoleon's life. There was also his sister Pauline who constantly reminded him of the disgraceful ignominy of his humiliating flight from Fontainebleau. Furthermore, his mistress, the Countess Maria Walewska, had shown her loyalty and affection for Napoleon by coming to the island with their son. The King of Elba, however, was expecting his wife, and quickly, but possibly reluctantly, sent them back to the mainland. This contrast between the wife and mistress is one of the striking characterizations of Mr. Herbert's book. Added to the influence of the women in his life on Napoleon's decision was the irritating espionage of the British Colonel, Sir Neil Campbell, and the denial of the privileges granted him by the Treaty of Fontainebleau.

History has mainly depended for its estimate of Napoleon at Elba on Colonel Campbell's evidence. Sir Alan has no difficulty in proving that Campbell is not a reliable witness. He feels that as a British author he should redress the balance of history that has been unjustly influenced by Campbell's prejudices. The resulting work of fictionalized biography is a most interesting and illuminating psychological study of Napoleon and of his momentous decision to return to France and Waterloo.—BRIGADIER GENERAL DONALD ARMSTRONG.

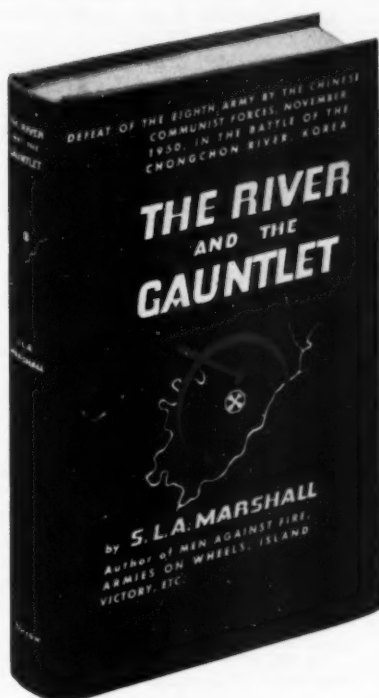
LIFE OF MITCHELL

MY BROTHER BILL: The Life of General "Billy" Mitchell. By Ruth Mitchell. Harcourt, Brace & Company, 1953. 344 Pages; \$4.00.

From this book by a close relative we might have learned a great deal of Mitchell the man, if not of the theories he advocated. But disappointment comes early. A third of the book, obviously based on Mitchell's letters to the folks at home, covers sidelights in his tour as a young officer establishing depots in Alaska for the Chief Signal Officer (whose famous name is consistently misspelled). Mitchell as pioneer flyer and as our No. 1 airman in World War I takes exactly twenty-three pages, followed by fifty on the bombing demonstrations; twenty-two are devoted to the trial, and only four to his life after he resigned from the Army.

The truths and fallacies in Mitchell's theories have been thrashed out in detail by experts over the past thirty years, and are too well known to need restatement here. But this "life" clears up nothing that hasn't already been cleared; it is heavy with invective, half-truths, omissions and apparent reliance on memory rather than documentary sources.

A sample of the caustic treatment is this description of the "prosecutor" (trial judge advocate; also the author calls members of the court "judges"): "Lank, cadaverous, pale, with thinning wisps of hair, a cavernous mouth, and given to wetting his lips with a flickering tongue, he was already noted as a master of vituperative invective." Those numskulls who couldn't see Mitchell's way are lumped into "General



The first full report on the Chinese Communist entry into the Korean War

**S. L. A.
MARSHALL**

THE RIVER AND THE GAUNTLET

General Marshall neither generalizes nor censures, but paints a grim, dramatic and vivid picture of *fact*. Based on exhaustive interviews of the participants in battle, he mirrors the truth of the battlefield, separates fact from theory, and makes sense out of confusion and misunderstanding.

At the time of the Chinese attack, the author was Infantry Analyst with the Eighth Army in Korea. His book casts a white light on what *actually* happened.

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Staff," "West Pointers," "artillery," "cavalry," "disciplinarian."

As for being out of element in military matters, one quote is enough. As nearly as can be determined, it refers to the action at St. Mihiel, in the trench-warfare days: "... The great hero of this epic battle was Eddie Rickenbacker. He not only shot down aircraft, but by attacking the retreating German troops on the ground, their transport, artillery, and trucks, he caused the roads to be so piled up and choked, that large organizations of Germans, unable to get away, surrendered to our infantry rather than be shot to pieces from the air. It was the first time in all history that such a thing had been done." A feat, it might be added, never since duplicated.—N. J. ANTHONY.

FOR BASEMENT CRAFTSMEN

POWER TOOLS FOR THE HOME CRAFTSMAN.
By Edwin G. Hamilton. McGraw-Hill Book Company. 277 Pages; Illustrated; Index; \$4.95.

Hobby-shop work is not the private preserve of the enlisted man, despite the tone of the PIO publicity that appears in post and public newspapers. Many field officers have power tools in their basements and garages; we know of one colonel on duty in Washington who has more orders for furniture than he can fill on his present tour of duty. A lieutenant colonel we know bought himself a power saw, jointer, lathe and drill press and added several

thousands of dollars to the value of his house. Polo is becoming a lost art; the conversation these days is about capacitor motors and the proper angles to sharpen anti-kickback saw blades.

All of which is by way of preamble to indicate that a book of this type, if properly done, would be the answer to a lot of prayers in the military service. Mr. Hamilton almost did it, but not quite. The author knows his subject but probably too well. All how-to-do-it books should be written by two men, one of whom knows his subject and the other to perform the duties of General John Sedgwick's staff officer, the anonymous gentleman who read all orders before publication because if he could understand them, anyone could understand them.

This book, with many illustrations, covers the circular saw, jointer, band saw, scroll saw, lathe, drill press, sanders, grinder, and shaper. The man who uses it will be better off than the man who doesn't because there is a lot of good dope here, and more about safety than is offered even in the manufacturer's instruction books. Information on how to choose power tools, and how to plan a workshop, is an added dividend.

The principal objection to the book is that the author assumes, in many places, too much knowledge on the part of the reader. He mentions jigs, but offers very little information about how to make them, and almost as little about how to use them. The illustrations, though good, are poorly identified and keyed with the text; this is more annoying than serious. The sudden appearance of technical terms, with no previous explanation and no glossary, is more serious. Probably the author and publisher knew all this and didn't dare add to the size of the book because it would have upped the price, which is considerable already. In any event, even though there could be a lot of improvement, this book is as good as any on the subject and is a valuable addition to the home workshop library.—A.S.

WEST INDIAN HISTORY

LIBERATORS AND HEROES OF THE WEST INDIAN ISLANDS. By Marion F. Lansing. L. C. Page & Company. 294 Pages; Illustrated; Index; \$4.00.

Although there is no indication that the book was meant as a juvenile, *Liberators and Heroes* is pitched perfectly for the reader in his early or middle teens. The West Indian islands have been the scene of much blood, rapine and other civilized scourges, but the mild treatment and lack of color in the author's style makes even the story of Haiti read like a school history of the War of 1812. A good gift item for the youngster who is beginning to like the study of history, but not for the adult student who wants the full flavor of a colorful portion of the Western world.—A.S.

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Off-Duty Reading

THE German General Staff has, we suppose, been studied as extensively as any military organization of modern times but the results of the studies have had rather limited distribution and no general work deals satisfactorily with its operation in World War II and its ultimate destruction. Now, however, Walter Goerlitz, a German historian, has given us *History of the German General Staff, 1657-1945* (Praeger, \$7.50). We will not attempt to review the work in these few lines, but it is evident that it is a book of major importance to the military reader—a book that deserves serious study. Although it is not a technical study of the German General Staff, it does give in terms of history its strengths and weaknesses and the characteristics it took from the men who built it and the men who destroyed it.

FOR those of you who thought the *Caine Mutiny* was a great book—and for those who didn't—we have another really fine sea story, *Far From the Customary Skies*, by Warren Eyster (Random, \$3.75). As a novel, we don't believe it's as well organized as *Caine*, nor does it have the drama of outright mutiny, but it is still a tremendously dramatic story of men on a destroyer in wartime. The final drama is the destruction of the ship in battle and this, with Mr. Eyster's other battle descriptions, is very good indeed.

THE *Wonderful World of Books* (Houghton, \$2.00) is a very fine title for a book that doesn't quite live up to its promise. It is a how-to-do-it book for those who want to find time to read intelligently and to benefit from what they read. We think the book lacks integration, might better have been done by a single author rather than the long list of guest contributors. Be that as it may, there is much good in it for the man who wants to read or to improve his reading. Certainly it is a long step in the right direction.

WE now turn this column over to our editor in charge of fresh- and salt-water fishing. Spring is here, there are fish to be caught and he has a few words to say:

Two fishing books of the many that come off the press each year are worthy of note. *Salt Water Fishing*, by Van Campen Heilner (Knopf, \$7.50) is one of those books you certainly don't need but that are so very nice to have. This is a revised edition of a book that first appeared in 1937, and boasts of a preface by Ernest Hemingway, no less. Heilner not only tells, in a literate and readable fashion, of fishing adventures around the world; he offers some terse and valuable information on how each species is caught. There are some beautiful color illustrations, as well as a whole section of photographs. From the lowly fluke to the expensively-hunted tuna, the book covers most species of salt-water fish and most styles of fishing short of seining. It's a book that will fit on the library shelves of the most discriminating, and it's wonderful reading when you can't be out fishing.

Hal Sharp's *Sportsman's Digest of Fishing* is at the other end of the scale; it's only \$1.50 (Sterling Publishing Co.) and it's how-to-do-it exclusively. Illustrations on every page, pocket size, it's the perfect companion for the fresh-water fisherman who makes no claim to being an expert. It doesn't answer all the questions (no fishing book yet manages to do this) but it answers enough of them, and clearly, to make it a good buy for all but the most expert. We'll buy one ourselves when Sharp breaks through with one on salt-water fishing. We could use some of these sensible, and even obvious, ideas, and if we ever get talked into any fresh-water fishing we'll take it along and bone up on it while the experts are looking the other way.

ALL contributors of fishing tales will please send their essays by slow freight . . . we're overstocked already.—O.C.S.

lished by Ray Kiling and Robert Hatter at The River House, 1952. 60 Pages; \$10.00.

This is a direct, black-and-white reproduction of the original text and illustrations of the regulations issued by the Confederate War Department in 1861 for officers' and enlisted men's uniforms, and the insignia of ranks and branches. The publishers have added similar original matter relating to the Confederate Navy, which we learn has never before been offered for sale. Early last year an original copy of only the Army portion sold at auction for a thousand dollars. A collector's item, limited to an edition of only 400 numbered copies, on fine paper. That accounts for the price.—N.J.A.

TINKER TO EVERS TO FREEDOM
A RELUCTANT TRAVELER IN RUSSIA. By Tadeusz Wittlin. Rinehart, 1952. 280 Pages; \$3.00.

This Polish poet got away from the Germans by escaping into Russian-held territory. He could speak Russian and by quick thinking kept out of prison until he was caught trying to get across a frontier again. He then was held prisoner until released to become a soldier in the Polish Army.

Wittlin's story is one of the few escape accounts with a fair feeling of humor in it. He time and again jibes at Russian stupidity and ignorance. But the background is that which more and more prisoners of the Russians have been describing—the neglects and cruelties of the Soviet slave labor system, and above all its waste of human potential.—G.V.

BOOKS RECEIVED

PICTURE: A Story About Hollywood. By Lillian Ross. Rinehart & Company, Inc. 258 Pages; \$3.50. How a motion picture studio functions based on how *The Red Badge of Courage* was produced.

WHO BLOWED UP THE CHURCH HOUSE? and Other Ozark Folk Tales. By Vance Randolph. Columbia University Press. 232 Pages; Illustrated; \$3.50.

HARWELL: The British Atomic Energy Research Establishment. Philosophical Library, Inc. 128 Pages; Illustrated; Index; \$3.75.

STUDENT DEFERMENT IN SELECTIVE SERVICE. By M. H. Trytten. University of Minnesota Press. 140 Pages; Index; \$3.00. By the Director of the Office of Scientific Personnel, National Research Council.

OUR WORLD FROM THE AIR: An International Survey of Man and his Environment. By E. A. Gutkind. Doubleday & Co., Inc. 256 Pages; Illustrated; Index; \$7.50.

LYING IN STATE. By Stanton Griffis. Doubleday & Company, Inc. 315 Pages; Illustrated; \$3.75. A bookseller, scholar and diplomat tells something of his life.

FREE INDIA IN ASIA. By Werner Levi. University of Minnesota Press. 161 Pages; Index; \$2.75.

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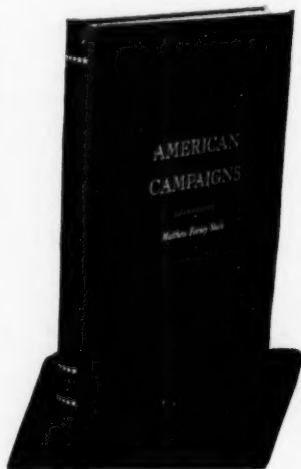
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